

# DISTRDO

081712 #53

engadget<sup>®</sup>

**LENOVO'S  
THINKPAD X1  
SLIMS  
DOWN**

**VIZIO  
ENTERS THE  
ULTRABOOK  
MARKET**



**AMERICA  
EMBRACES  
THE MIGHTY  
WIND**



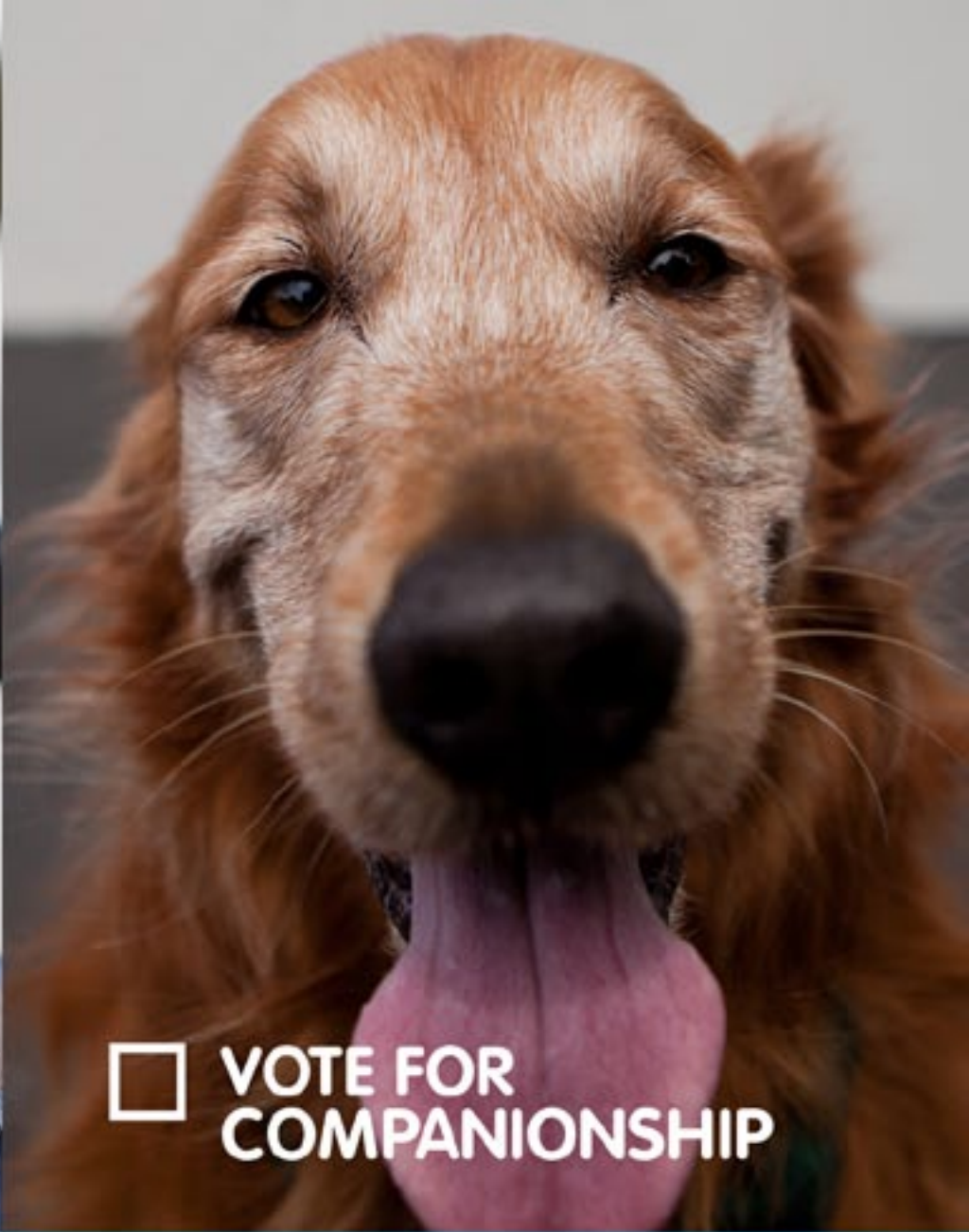
## It's an S Pen! It's a Stylus!

BUT IS IT ENOUGH TO SET THE  
GALAXY NOTE 10.1 APART FROM  
THE COMPETITION?

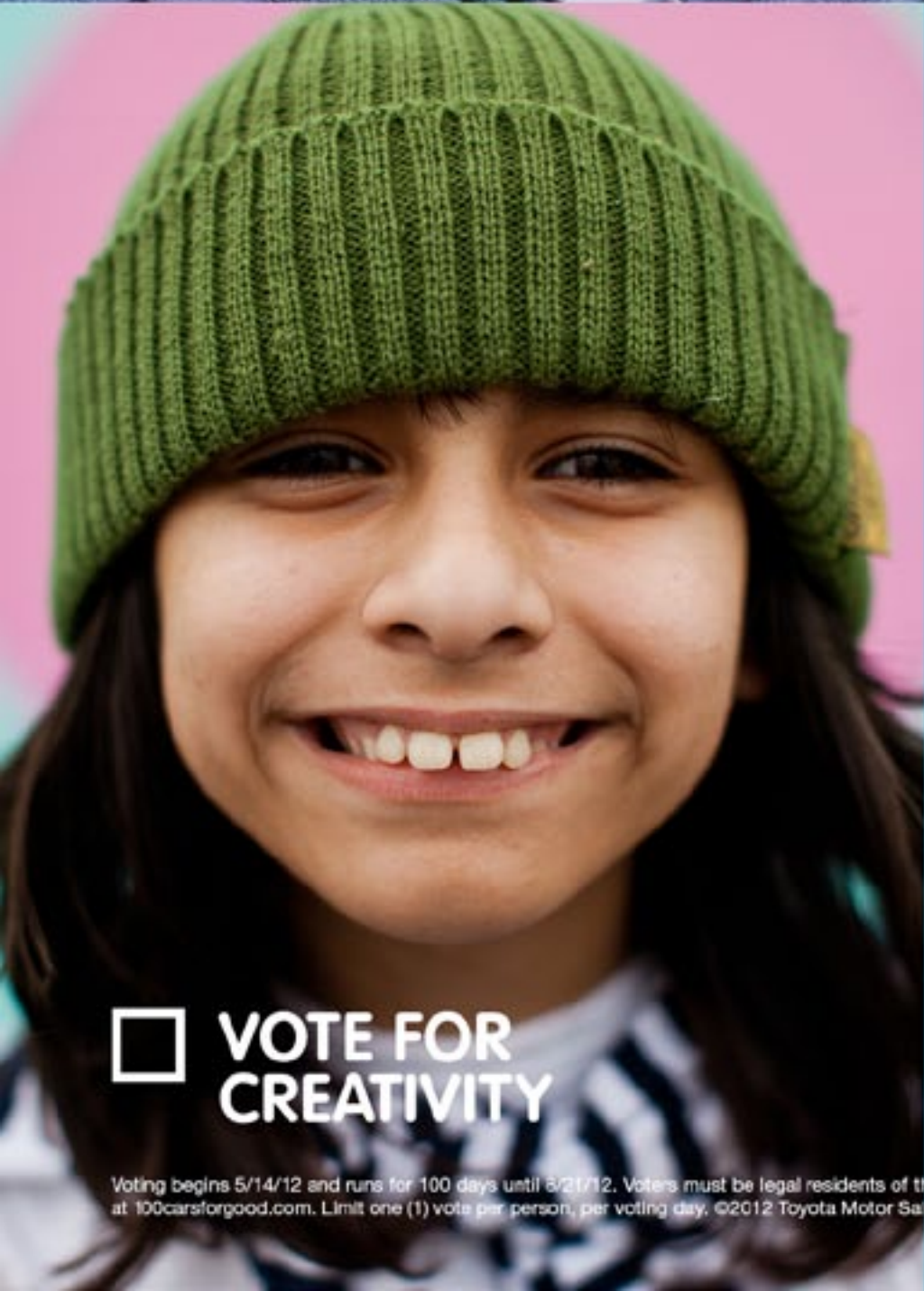




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DISTRO

08.17.12

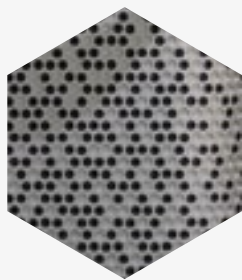
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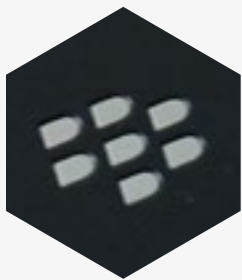


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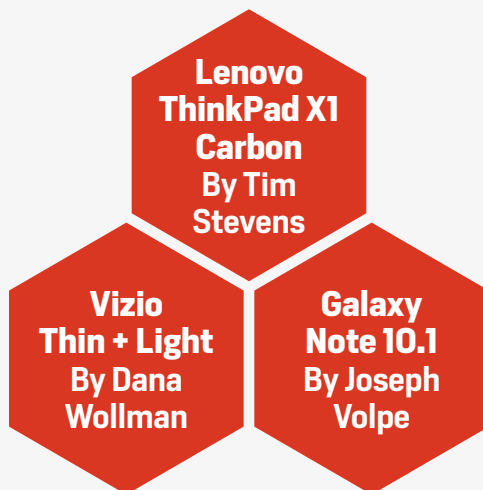
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*On the Cover:  
Photograph by  
Will Lipman*



# NOTE THE NEW WAY

DISTRO  
08.17.12

EDITOR'S  
LETTER



**W**hen Samsung launched a smartphone with a screen greater than five inches across, a lot of tech pundits were quick to write the thing off. It's a phone form factor that Dell had tried and failed to make stick before with the Streak, but this week it's clear Samsung is having the last laugh. The company proudly presented a figure of 10 million units sold worldwide, which isn't quite blockbuster territory, but is very strong sales for a device that defies succinct categorization — “smartphone” doesn't quite work and “phablet” is just difficult to say with a straight face.

Samsung dropped this choice nugget of news on us at the unveiling of its Note 10.1, a tablet whose full review you can read in this very issue. It's the stylus S Pen-having version of its 10-inch predecessor, a sort of beautiful offspring of the Galaxy Note and Galaxy Tab 10.1, packing a 1.4GHz quad-core CPU, up to 32GB of internal storage and microSD expansion. The only slight disappointment is a 1,280 x 800 LCD, somewhat pixel-sparse in these heady, high-def days, but a \$500 MSRP for the 16GB version at least has it in the same ballpark as the competition.

Samsung also unveiled an LTE-having version of the Galaxy Tab 2 7.0, Verizon-bound and shipping now. It's still running Android 4.0 on a meager 8GB of internal storage, powered by a slightly faster 1.2GHz dual-core CPU and selling for \$350 — no contract required. That's a fair bit less expensive than many LTE-equipped tablets that we've seen before (like the Galaxy Tab 7.7, which launched in March for \$500 *on contract*) and a sign that perhaps tablet makers and wireless providers are finally learning how much people are — and aren't — willing to pay for a WWAN-equipped slate.

Also more affordable is the entire suite of Nook devices, Barnes & Noble is lowering the top-shelf 16GB Nook Tablet to \$199 (from \$249), the 8GB version to \$179 (from \$199) and the Nook Color to \$149. So, you can now get a Nook with more storage than the Nexus 7 for the same money. Any takers?

The RTM (release to manufacturing) version of Windows 8 was released officially to developers this week — and anyone else with an MSDN subscription. As the name implies, this is the version of the OS that will be shipping this Octo-



ber, with no further changes expected. It is, of course, always possible that Microsoft will push out an update to be applied immediately after install, but any subsequent improvements will be minor.


And what's changed in RTM from the release preview? Not a whole lot, really. The Bing app has made its full appearance, there are some performance and customization improvements and ... that's about it, really. If you were holding out for the Start Button to make a dramatic, last minute return prior to release, it's now officially time to give up all hope. It's gone, friends, gone.

HTC, after releasing the hugely impressive One X, has been seen to be floundering a bit, its most recent financial report showing a startling decline in sales. CEO Peter Chou fired off a missive to his employees, asking for them to "kill bureaucracy" and "follow rules and criteria, but don't let small things kill the major goals." Basically, to be more agile. Rallying cries in the form of corporate memos rarely inspire much esprit de corps, but if it results in an even better One next time, we'll consider that a victory.

The latest console sales numbers came in via NPD, and Microsoft is still ruling the roost with the Xbox 360, which came just one percentage point short of owning a full half of the console gaming market share. That on its own is impressive, but if you look at the bigger picture — hardware sales overall down 32 percent, game sales down 23 — it's clear to see that the traditional

games industry is hurting. Those new consoles can't come soon enough — and in my humble opinion, fall of 2013 is *not* soon enough for Sony and MS.

Finally, the Curiosity Rover received the mother of all OTA updates this week, a "brain transplant" designed to get the thing ready to drive about. Basically, you know, to make the thing rove. It's still expected to stay stationary for another week or so, acting all touristy and taking a bunch more pictures before finally branching out and exploring its surroundings. Thankfully, we all get to go along for the ride.

In this week's Distro we'll be bringing you Joseph Volpe's full review of the Note 10.1, in which you'll learn whether a stylus really lets you do more with a tablet. We also have Dana's take on the Vizio Thin + Light Ultrabook and my own review of Lenovo's ThinkPad X1 Carbon. For editorials, Ross Rubin has ThinkPad on the brain too in his latest Switched On, Joshua Fruhlinger talks about changing gadget habits and Jon Fingas challenges carriers to let users choose their own phones. All that plus Red Hat's Chris Moody does Q&A and we have another IRL installment. Would you like to know more? You know what to do. 



TIM STEVENS  
EDITOR-IN-CHIEF,  
ENGADGET





# ENTER

DISTRO  
08.17.12

EYES-ON

## BANG & OLUFSEN BEOLIT 12

Tap for detail



CUT THE CORD



NICE  
GRILL

### BANGING SOUND

Looking something akin to a picnic basket, this portable Bang and Olufsen audio player is a throwback to the company's Beolit transistor radios from the 1960s. The system's designer, Cecilie Manz, focused on simplicity and quality materials, like Italian leather and perforated aluminum, giving the retro system a contemporary twist.

### THE DAMAGE

\$800





**PRICING:****\$550 CAN (\$554 US)****AVAILABILITY:****NOW AVAILABLE (CAN)****THE BREAKDOWN:****THE ADDITION OF 4G LTE MAKES THE PLAYBOOK QUITE SPEEDY, BUT IT STILL LACKS A COMPELLING APP SELECTION.**

Click on  
product  
names to  
read full  
stories

# BLACKBERRY PLAYBOOK 4G LTE

**RIM's attempts to get** a cellular-equipped version of the BlackBerry PlayBook have been troubled, to say the least. The company signaled its intentions last February, only to watch as carriers backed off. A year and a half later, we finally have an LTE version, and with a faster 1.5GHz processor to boot. If you're looking for cosmetic differences, they'll be tough to find. About the only conspicuous change since the original is the presence of a micro-SIM slot tucked just behind the ports at the bottom. The new PlayBook will be a disappointment for display quality aficionados that would like RIM to move past the 1,024 x 600 screen we saw last year.

We tried the PlayBook on Rogers' network in Ottawa, and it was not just fast, but consistently fast: multiple tests saw 20Mbps downstream and 6Mbps upstream. The 1.5GHz processor does indeed make a difference. RIM's interface is just a little bit more fluid, apps are smoother, games like *Need For Speed: Undercover* are just a bit faster. Where we noticed the clock speed

hike was in browsing — and by a wide margin. It's faster than not only the WiFi PlayBook but the iPad, the Nexus 7, the Galaxy Tab 2 7.0 and even the quad-core Galaxy S III smartphone.





# KLIPSCH IMAGE ONE SERIES

**Klipsch has gone ahead** and unveiled its revamped Image One on-ear set. The new Image One is acoustically similar to its predecessor, but now it has a more stylish and robust design. Notably, the headphones only have a single cable leading into the left earcup and it's also of the flat variety to prevent tangling. The earcups can still fold flat, but now they can fold into the headband as well. Klipsch has decided to finally enter the wireless headphone game by offering a \$250 Bluetooth-equipped variant. This version looks nearly identical, with the subtle tweak of having the playback and volume controls positioned as buttons on the outside of the right earcup.

We're happy to report that both versions felt and sounded identical. The new earpads

**PRICING:**

**\$150-\$250**

**AVAILABILITY:**

**AUGUST**

**THE BREAKDOWN:** DESIGN IMPROVEMENTS AND A BLUETOOTH VARIANT KICK THE SERIES UP A NOTCH WITH A HEAVY DOSE OF BASS.

simply contoured with our ears much better than the original model, making for a more comfortable experience. We'd be remiss not to point out that the level of noise-isolation seems to be improved as well. Let's talk audio quality. From what we could tell standing in Irving Plaza's bustling balcony, both sounded identical just as Klipsch claimed. Without any EQ applied, the bass department muddled up the rest of the mix in songs. Once we slightly bumped up the 4 and 14kHz treble frequencies in Google Music, however, the veil was essentially lifted.





# KLIPSCH IMAGE S4i (II), S4A (II) AND X7i

**PRICING:**  
\$150-\$250

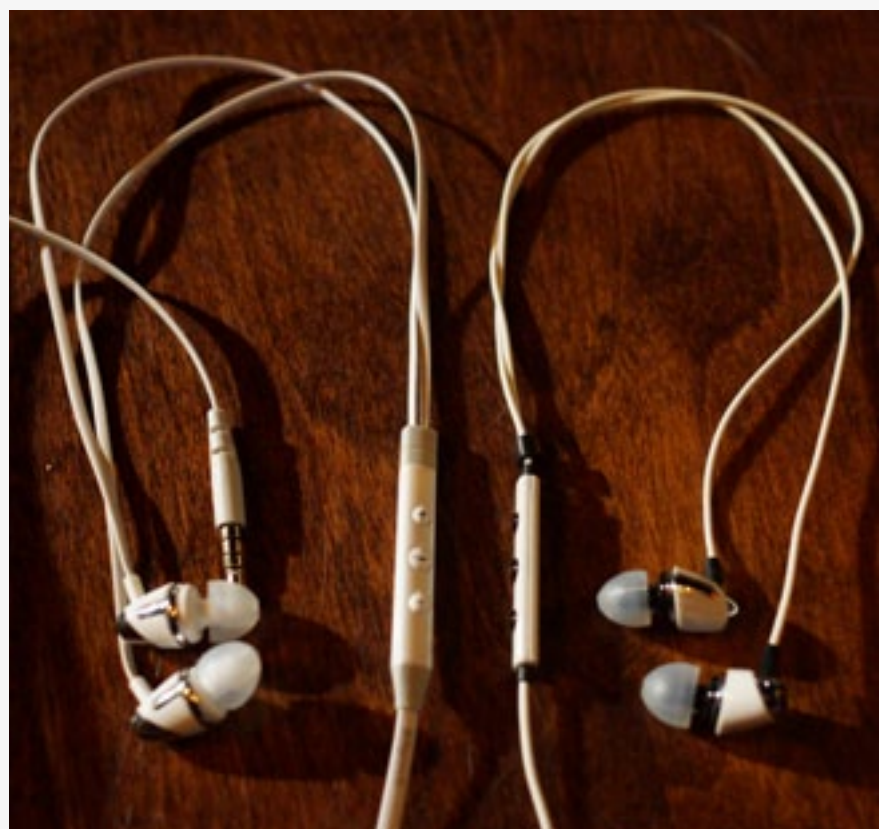
**AVAILABILITY:**  
AUGUST

**THE BREAKDOWN:**

THE S4 (II) SERIES TWEAKS THE DESIGN WHILE RETAINING SOUND QUALITY AND THE X7i COVERS THE MID-RANGE.

**Klipsch recently revealed** its new \$200 Image X7i and a trio of Image S4 (II) series in-ears. Being that all of the S4 (II) models are acoustically identical, we specifically used the iPhone-focused S4i and Android-purposed S4A. Although the button layout is different for both models, the casings are essentially the same and a bit chunkier than that of our OG S4i. Sound quality is warm with a pleasant amount of chunky bass that doesn't overwhelm. Furthermore, the headphones are still using Klipsch's super comfy oval-shaped silicone tips, which also helped drown the bustling balcony around us admirably.

Moving along to the X7i, we're not sure we'd choose it over the S4 (II) models. The X7i's balanced-armature drivers deliver a flatter response and cleaner sound than the S4s, but as we experienced with the X10i, it might not sound or feel like a drastic improvement to most for the price. This editor found the treble to be much too bright for his tastes — especially with rock and pop tracks, it became quite jarring un-



less we toned it down with Google Music's EQ. Because of the tiny size, however, we had to jam them oddly far into our ear canals to get a tight seal no matter which tips we used. Outside of the earpieces, the cabling is identical to that of the S4i. **D**



# Americans Embrace the Mighty Wind

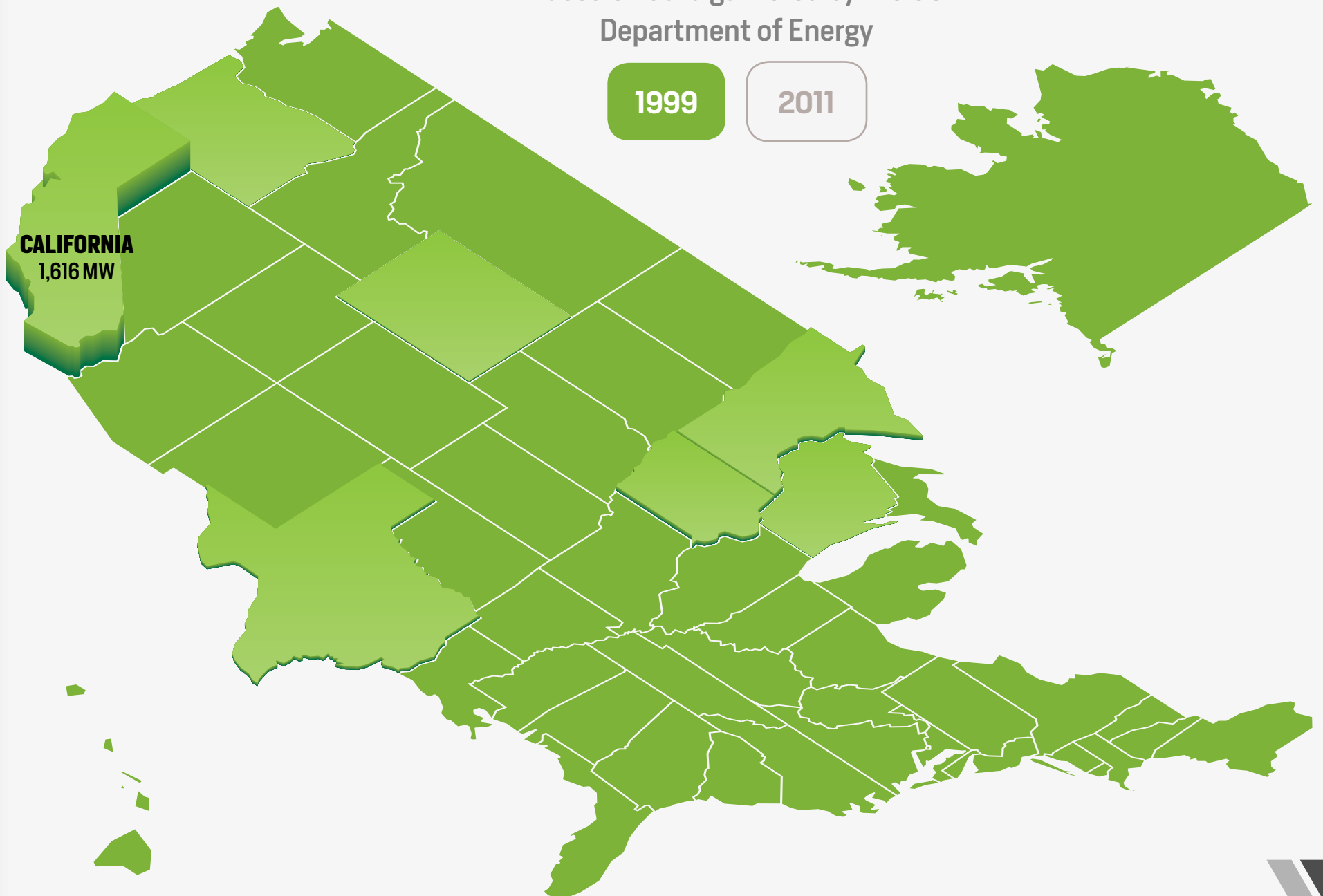
**Up until the early '90s**, wind power had found meager footing around California, but little traction in the rest of the country. Now, that appears to be changing. According to the DOE's Energy Efficiency & Renewable Energy division, the US is harnessing more wind power than ever across 40 states. It's also on its way to meeting the department's 2008 goal of using wind power to supply 20 percent (300,000 megawatts) of the nation's energy by 2030. While California led the crowd in 1999, with a capacity of 1,616 megawatts, Texas is now out in front with a capacity of 10,377 megawatts last year. Meanwhile, areas like Washington and Illinois went from zero output in 1999 to about 2,600 megawatts a piece in 2011. In total, we've seen wind energy output grow by 27 percent over last year. — *Jon Turi*

## INSTALLED WIND CAPACITY BY STATE

Based on data gathered by the US  
Department of Energy

1999

2011







Rucker's collected short stories are now free in HTML.

## Rudy Rucker's Complete Stories

*Transreal Books*

If you're a fan of science fiction, particularly of the cyberpunk variety, there's a good chance you've discovered the works of Rudy Rucker at some point in your reading life. Best known for his Philip K. Dick award-winning "Ware" series (*Software*, *Wetware*, *Freeware* and *Realware*), Rucker is also a prolific writer of short stories, all of which have been collected in his *Complete Stories* e-book (also released as two paperback volumes). That was first published in April and made available through the usual outlets for the bargain price of \$6, but Rucker recently went one step further. He's made the whole thing available (in HTML format only) on his website for free — "for purposes of SF vitality, and as a kind of promotional move," as he puts it. In addition to his solo efforts, the collection also includes his collaborations with the likes of Bruce Sterling, Marc Laidlaw and John Shirley, and it provides a fascinating look at the evolution of Rucker's writing and the ideas he's tackled — in his introduction, he suggests "you might do well to start reading somewhere towards the middle." — *Don Melanson*

RUDY RUCKER PHOTOGRAPH BY EDWARD MARRITZ

### The Surprising, Stealth Rebirth of the American Arcade By Kyle Orland

*Ars Technica*

Jam-packed arcades may now be nothing more than the stuff of nostalgia for most gamers of a certain age, but they aren't gone completely. As Kyle Orland reports in this piece for *Ars Technica*, they've actually been starting to make something of a small comeback, and in some cases are finding success by mixing alcohol and vintage games to cater to that older nostalgic crowd.

### Cyborg America: Inside the Strange New World of Basement Body Hackers By Ben Popper

*The Verge*

The cybernetic implants of science fiction are no doubt still quite a ways off, but that hasn't stopped some folks from trying to grasp a bit of that future today. As Ben Popper explains in this in-depth piece for *The Verge*, that not only includes well-known researchers like Kevin Warwick, but so-called biohackers, or "grinders," who are quite literally taking things into their own hands.

### How Weibo Is Changing China

By Mary Kay Magistad

*YaleGlobal Online*

Twitter and Facebook may not have a presence in China, but the country does have its own massive social network: Sina's Weibo, a 3-year-old microblogging service with more than 300 million users. Like other social networks, it's fostered some degree of societal change in the country but, as Mary Kay Magistad notes here, those changes have also come with some considerable limitations, including government monitoring and outright censorship.



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# WHATCHOO GOT UNDER THE HOOD?

DISTRO  
08.17.12

FORUM

THIS IS THE  
MODEM WORLD

BY JOSHUA FRUHLINGER

**I JUST BOUGHT A NEW CAR.** I chose an automatic transmission. I know, I know. In order to really appreciate driving, one must have three pedals and be in complete control of his torque curve. ¶ But I do love driving and can hold my own in a conversation about horsepower, suspensions and cold-air intakes. As for working on cars, I could change my oil, but nothing more. In my teens, I drove a manual 1980 VW Rabbit that I took from Orange County to LA and back again almost every weekend. I loved the car, but after years of stop-and-go, my clutch leg grew giant-sized, like a crab. I promised myself to never sit in traffic in a manual transmission again.

So now I have a nice new car with an automatic transmission. The funny thing, though, is that technology has made automatics more efficient and faster than manuals. Tiptronic with paddle shifters are now the stuff of supercars; computers dial in peak shift

points with manual overrides to give control back to the driver.

My car is complex and there is little chance that I will ever work on it myself. If I want to tweak performance, I'll have its ECU computer flashed to deliver more horsepower. My car is a





# The writing is on the wall, my solder-wielding friends: digital grease monkeys are being marginalized just like car junkies have been.

closed gadget — there's nothing of use to me under the hood. Heck, it doesn't even have a dipstick — the digital dash displays oil levels.

But it drives like a dream.

The other day, a friend was romancing about the control he has over his home-built computer: He overclocks, swaps GPUs, installs cooling units and, like a car enthusiast, manually tweaks his machine to his specs. It's a beautiful thing. His computer has a clutch.

To me, that's a lot of work. I want to browse the web, play some games, watch some videos, maybe get some work done and do whatever it is I want to do with my gadgets. I'm okay with cases that don't open as long as the device runs well.

Some are still tinkerers, their heads hovering over motherboards on Saturday afternoons in order to squeeze out more performance while the rest of us are out there just speeding along.

But the writing is on the wall, my solder-wielding friends: digital grease monkeys are being marginalized just like car junkies have been. First, we

lost external drives. Back in the day, we daisy-chained floppies on serial ports and stacked SCSI hard drives. Then we lost floppy drives when hard drive prices dropped and CD-ROM drives became standard as methods of input. Now the optical drive is gasping its final breath as download speeds make physical media redundant. We can't even access the batteries in many of the major laptops and smartphones on the market.

Some of us are chronic clutch-riders and tweekers while the rest of us are happy to worry about less. In 20 years, will there be some dark underground crawling with nerds who still build their own computers, who overclock machines from the 2000s and call them classics like some delicious scene from a William Gibson novel?

Imagine a day in 2034 when a future one of us, hanging out in the back room of a battery recycling center, says, "Just picked up a 2012 Acer Aspire. Needs a new USB controller but runs *Guild Wars* like a dream."

Let's hope so. That would be cool. 



# G-SHOCK AND THINKPAD

DISTRO  
08.17.12

FORUM

SWITCHED  
ON



BY ROSS RUBIN

**In mature, competitive** markets flooded in products, many brands come and go. Last week, though, two companies came to New York City to celebrate milestone anniversaries of their electronic products. Lenovo celebrated the 20th anniversary of the ThinkPad as Casio marked the 30th anniversary of the G-Shock watch. The notebook PC remains among the most versatile and complex devices consumers use today while the watch one of the simplest. Yet, some commonality between these two products may include lessons for other technology products that wish to remain around for decades.

## DURABILITY

Perhaps one aid to building brands that last is building products that actually last. Both companies pointed out the toughness of their products. Indeed, the idea behind G-Shock was to build “an unbreakable watch” and the company continues to roll out new approaches to protect its timepieces against impact, vibration and centrifugal force. Casio executives showed off all kinds of watch-

torture devices, including a live demonstration in which it survived being shot out of a watch cannon. (Warning: Do not try this with your watch cannon at home.)

It’s been a while since we’ve seen Lenovo ads highlight the ThinkPad’s “roll cage” and other safety measures as it has played up its “For those who do” campaign. While ruggedness isn’t quite as intrinsic to its laptop, Lenovo relied instead on anecdotes about the ThinkPad’s resilience. A guest speaker noted that seven of them were subject to the harsh environment, cramped accommodations, and sometimes the wandering limbs of rookie astronauts on the Space Shuttle.

## DESIGN

Many years ago, the designer of an early smartwatch defended the girth of the wearable device by noting that bulky watches were “in.” He was referring primarily to the G-Shock, which not only has several distinctive facades, but also has branched out into a Baby-G sub-brand as well as collaborations with several designers. A Casio presentation mentioned one collector who has over 200 Casio G-Shocks. That’s a lot for a watch designed not to break.





The ThinkPad sub-brand is so strong that it has even survived a corporate adoption from a parent (IBM) that was once synonymous with PCs. Lenovo went into more depth about the design of its ThinkPad, including its well-regarded keyboard and signature TrackPoint — a user-input device once offered by several Windows laptop makers including Dell and Toshiba, but for which Lenovo is now the main champion among major brands. Lenovo even talked about the meaning of the color black, which it identified with power and sex, and the decision to put the angled ThinkPad logo in the corner of the lid, a contrast to the central placement used by rivals

Of course, no discussion of ThinkPad design history would be complete without mentioning the “Butterfly” expanding keyboard on the ThinkPad 701C which, despite landing a space in the permanent collection in the New York’s Museum of Modern Art, was never implemented on another model as screen sizes grew. It’s surprising that Lenovo or a licensee hasn’t sought to bring it back in this era of 7-inch tablets and smartphones.


## DEVELOPMENT

While the watch and the notebook have become staples in many of our lives, new converged devices are challenging their role supremacy. Casio and Lenovo embraced their role of brand caretakers to show that their products won’t rest on their legacy. The rise of smartphones,

all of which can relay the time among so much other pertinent information, has made the wristwatch more about fashion than function. In response, a string of smartwatches from companies such as Pebble, MetaWatch and Cookoo have attracted funding via Kickstarter. These watches connect to smartphones and sometimes use advanced displays to show a host of glanceable data.

Casio, too, is hopping on the Bluetooth bandwagon with its forthcoming GB6900, but its connected watch will retain the same display as current G-Shocks, relying on its paired partner for more mundane tasks such as automatic resetting of time depending on the time zone and alerts for when the watch gets out of range from the smartphone, hinting that one may have left it behind.

As for Lenovo, the tablet threatens to disrupt several of the ThinkPad’s characteristics such as its TrackPoint and keyboard (as well as the software library advantages it enjoys supporting Windows). But there was no grouching about Surface as Lenovo unveiled its next ThinkPad tablet, which will support Windows 8. Rather, it teased hybrid products in the wings.

The G-Shock GB6900 Bluetooth watch and the ThinkPad Tablet 2 with Windows 8 both represent relatively low-risk plays for the venerable brands. Whether they are enough to keep both product lines growing as their categories are under siege is a drama that will play out in the decades to come. 



# CARRIERS, LET CUSTOMERS CHOOSE THEIR OWN PHONES



DISTRO  
08.17.12

FORUM

EDITORIAL

BY JON FINGAS

**R**EMEMBER WHAT THE EXPERIENCE OF shopping for a gadget was like at big-box stores years ago? Whatever your actual needs were, the store clerks would invariably steer you towards whatever they were getting a commission to sell, or whatever scratched their personal itch. Why would you even go to a store if you knew you would never get an honest answer? The problem was bad enough for Apple in the 1990s, when Macs were often relegated

to a dark corner alongside the Ethernet cables, that the company started up its own retail chain. It didn't get better for most of us until outlets like Best Buy backed off and sometimes made it a point to advertise commission-free staff. Today, while it's tough to completely escape personal bias and the occasional exception to the rule, it's more likely than not that a modern general electronics store will give you a decent

shot at buying what you really want. But just try buying a cellphone at a carrier store today.

Jeff Stern recently recounted a telling experience from overhearing multiple sales pitches at a carrier store — a Verizon store, but it might as well have been AT&T, Sprint, T-Mobile or any other US provider. Employees were not only pushing the Galaxy S III (an admittedly fine phone) to the ex-





# The companies almost always have an agenda to push, whether it's the network or the phone du jour.

tent of ignoring virtually everything else, they were actively steering customers away from alternatives with claims that had little connection to reality. It's not just an isolated personal anecdote, either. *CNN* saw a similar pattern emerge this spring where Verizon staff members were steering customers away from the iPhone by name, primarily as it doesn't have 4G to its credit. That's no doubt a stronger argument to make to a customer, but it loses credibility when the carrier is "really pushing 4G" instead of choosing what's best for the user, as one floor worker implied. What if buyers were content with 3G but had huge iTunes collections? We've had our own experiences of the sort — this writer overheard a few cringe-worthy statements from workers at a Rogers store in Canada just this past week.

Carriers will swear up and down that they only have the customer's best interests at heart, and that staff will gladly point us to any device if it makes the most sense. But they don't, and they won't. The companies almost always have an agenda to push, whether it's the network or the phone

du jour. Never mind theories about commissions; carriers publicly discuss "hero" phones that are expected to generate a large slice of the revenue for the next quarter, whether it's a Galaxy, iPhone or Lumia. How would they not bend over backwards to pump up sales of those models as much as possible? And if that's not the guiding principle in a given situation, we've all seen staff members who were either under-trained, had a chip on their shoulder or both. They're selling the corporate line or letting personal desires (and grudges) overrule their better judgment. It's that old big-box experience, all over again.

It's time that carriers take a cue from the past and stop playing favorites. No commissions. No quotas. No seeding staff with only one device or pitching another solely because it uses a new network feature. Train clerks to know as many devices and platforms as possible, and make sure that they really are asking what the customer wants rather than finding excuses to steer the sale towards a predefined conclusion. Yes, carriers can still have their special store displays and dis-




# Strong sales in the long term more often come organically ... they're rarely the result of a momentary carrier hustle.

counts. They just shouldn't place so much faith in one or two devices that they feel forced to bend the truth to close a sale.

The irony is carriers themselves have occasionally been burned by this retail strategy. We're all familiar with AT&T's "iPhone, iPhone, iPhone" mantra from 2007 through 2010. After telling virtually every shopper walking through the door that they should buy from Apple, AT&T shouldn't be shocked that most of its Android devices, later BlackBerry models and (so far) Windows Phones still have trouble getting much momentum. Store hype only works to a certain point, too. Verizon couldn't make people buy the

lackluster BlackBerry Storm for very long beyond launch day; all of Sprint's early store openings couldn't give the EVO 3D the same blockbuster results as the EVO 4G. Strong sales in the long term more often come organically, either from months of anticipation or the word-of-mouth from new owners. They're rarely the result of a momentary carrier hustle.

Going to a more hands-off approach does mean a greater risk of overstock on phones that simply won't sell, but then again, so does making a bad bet on a flagship phone. Letting customers guide the conversation and choose their own phones isn't just about giving customers the control they should have had all along. For carriers, it's a way to learn what customers really want. What good is it if a customer buys a bad phone (or more of a phone than necessary) and comes back to return it a week later? It's true that anyone reading this is likely the technically inclined person who would make the right choice, but we all know someone who was clearly pressured by a store representative into making a mistake while we weren't there to catch it. If we are happy with the retail experience, it's that much more likely that our friends and family will be as well. On that fateful day when anyone can go into a carrier store and expect reasonably unbiased help, they'll feel more welcome to come back — and that's helpful for everyone. 





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As shown and described.  
MSRP \$24,830.<sup>3</sup>

<sup>1</sup>Availability and accuracy of the information provided by the navigation system or any XM services mentioned (if installed) are dependent upon many factors. Use common sense when relying on information provided. Services not available in every city or roadway. Periodic navigation updates available at additional cost. See your Navigation System Owner's Manual or contact XM for details. <sup>2</sup>MSRP excludes delivery, processing and handling fee of \$760. Excludes taxes, license, title and other available or regionally required equipment. Dealer price will vary. THE GAME OF LIFE is a trademark of Hasbro and is used with permission. ©2012 Hasbro. All Rights Reserved. ©2012 Toyota Motor Sales, U.S.A., Inc.

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REVIEW

## LENOVO THINKPAD X1 CARBON



The **Lenovo ThinkPad X1 Carbon** has made the next pro-tool in the businessman's arsenal, but does it meet the high standards of success?  
**By Tim Stevens**

The storied **ThinkPad** line has just turned 20 and, over all those years, the brand has established itself as something that (mostly) successfully straddles the line between boring corporate accessory and classy consumer choice. Stoic is an apt term for the machines and, through those two decades, they've only gotten better and better — well, most of the time, anyway.

Welcome, then, to what is the latest and, therefore, what should be the best: the \$1,499 ThinkPad X1 Carbon. It's an evolution of last year's X1, thinner and lighter than that pre-Ultrabook de-





spite having a larger display. The Carbon moniker here not only describes this machine's matte black exterior but also applies to the woven and resin-impregnated composite structure within, delivering a rare mix of light weight, svelte dimensions and durable construction. It's a wonder to behold but can it improve on the previous ThinkPad X1's shortcomings? There's only one way to find out.

## LOOK AND FEEL

Lenovo has deployed many a wedge-shaped stealth fighter in the past, but the new X1 Carbon takes the cake as the cleanest design we've yet seen in a ThinkPad. It has few vents and grills and other visually distracting features, all kept to a minimum to deliver a monotone, minimalist appearance — and, presumably, a minimal radar signature, too. Closed, the laptop is just 0.71 inches (18mm) thick at

The X1 Carbon has few vents and grills and other visually distracting features, all kept to a minimum to deliver a monotone, minimalist appearance — and, presumably, a minimal radar signature, too.

the rear, slinking down to 0.31 inches (8mm) at the front, a taper that's accentuated when typing thanks to rubber pads that are slightly thicker at the rear than the front, making the keyboard just a few degrees more willing.

It's light, too, at three pounds

(1.36kg), making this the thinnest and lightest ThinkPad ever. Not content with that, Lenovo goes so far as to call it the “thinnest and lightest business Ultrabook on the market” and, while we don't feel like drawing arbitrary classifications to determine which of the many, many Ultrabooks are intended for profes-



The Carbon flexes its sleek, minimalist physique.





## The matte black design is unmistakable ThinkPad, angular shapes and monotone lines everywhere.

sionals, we're happy to report that the X1 Carbon doesn't overwhelm with either its heft or its breadth.

Despite the lightness and the thinness this machine feels incredibly stout. Though there is some flex if you twist hard enough, the laptop's carbon fiber chassis never feels flimsy. The keyboard tray is remarkably rigid, not bending even for typists with particularly heavy fingers, and, like last year's X1, it's able to survive eight MIL-SPEC tests. That means humidity, drops, temperature, vibration and even sand won't be an issue. It comes with a three-year warranty, but it's always good to know you won't be expecting to use it.

The matte black design is unmistakable ThinkPad, angular shapes and monotone lines everywhere, but it's interesting to note that those angles have been softened somewhat. Where sharp edges are traditionally the norm, they are subtly more rounded here. You don't really notice it until you get the X1 in your hands and carry it around for a bit, but the slightly rounded edges, plus the soft-touch coating, makes this a very comfortable laptop to actually use in your lap — much more so than many metal Ultrabooks, including the MacBook Air, whose sharp front lip can do a number on sensitive wrists.

Other than the optional SIM slot, lo-

cated around back on 3G-equipped models, all the ports on the X1 are on the left and the right sides of the machine. On the right, starting at the back, you'll find a Kensington Security Slot, a USB 3.0 port, Mini DisplayPort, a 3.5mm headphone jack and an SD card reader. Move to the left and, at the rear, you'll find a new-style rectangular power plug, the vent for the (nearly silent) CPU fan, a USB 2.0 port and the ThinkPad's patented wireless switch, which instantly kills all transmitters and receivers in the machine to extend your battery life. Think of it as a physical airplane mode toggle, your best friend when desperately trying to put the finishing touches on your proposal while the battery life indicator down in the taskbar is showing single digits.

Somewhat annoyingly, only that USB port on the right is of the SuperSpeed variety, and there's no visual differentiation between this one and the lowly 2.0 port on the other side, other than a tiny, gray "SS" silkscreened nearby. You'll just have to remember. And, we couldn't help but think the big, rectangular power plug is a bit of a step backward from the traditional round ones. It's slightly harder to line up and insert but, more troubling, it's the same height as a USB port, meaning if you're blindly trying to find a home for your thumb drive you might find yourself trying to jam it in the wrong place. Both



If you're blindly trying to find a home for your thumb drive you might find yourself trying to jam it in the wrong place.

issues, we might add, that go away with a bit of familiarity.

The latch-free lid closes securely, but opens easily. It has a slight lip on it, so you won't struggle to separate it from the lower half, and the hinge allows the display to open fully flat if you're so inclined, which gives you maximum opportunity to ogle the keyboard and trackpad, which we'll describe in just a moment. Beneath that and situated

to the right, in its traditional location, is the fingerprint scanner, which as ever lets you power on the laptop and log straight into Windows with just a single swipe of your digit of choice. Why more laptops don't offer this we'll never know.

In the lid is a 14-inch, 1,600 x 900 display with a bezel thin enough to let this laptop's dimensions (13.03 x 8.9 x 0.74-inches) match those of what before would be considered a 13-inch size. But, there's still enough space above to insert the 720p webcam, which does a fair but unremarkable job of capturing your countenance for the world to see. Even in bright lighting there's plenty of grain on display, but it's good enough you won't feel the need to pack along an external camera.

You *will* need to pack the external Ethernet adapter, as there's no room for one within the chassis, but at least Lenovo was thoughtful enough to include one in the box.

## KEYBOARD AND TRACKPAD

The traditional wide, spacious keys found on ThinkPads have been retired, replaced by the island-style arrangement found in the new X1. It's basically the same layout that we found in the

On the right you'll find the SuperSpeed port marked by an "SS."





You'll never have a doubt about whether or not you properly hit each and every letter in that ridiculously complicated password corporate policy dictates.

ThinkPad X230 so we won't detail all the minutiae here, but suffice to say this is a great layout that is both comfortable and responsive.

The keys are widely spaced, which will take a little adjusting to for those coming from older ThinkPads, but their curvature and texture make them very finger-friendly, and they still have that distinctive tension and "thock" feeling when depressed, resulting in

some stellar feedback. You'll never have a doubt about whether or not you properly hit each and every letter in that ridiculously complicated password corporate policy dictates.

There are two stages of backlighting, manually cycled by holding the Fn key and rapping on the space bar. The audio control buttons, one each for muting the speakers and the microphone, plus the volume rocker, have been moved

The new Carbon X1 has upgraded to island-style keys.



Speed typists who hate to leave their home keys will definitely appreciate the presence of this pointing device just to the left of their right index finger.

back up to the top of the keyboard after a brief dalliance on the right side in the older X1. There, too, lies the configurable ThinkVantage button, which is black rather than its traditional blue.

With that, the bright crimson pointing stick is the main dash of color to be found in the keyboard, and it provides a visual and tactile highlight for the machine. Despite nearly everyone else on the planet embracing trackpads, Lenovo won't give up on you, TrackPoint, and we're glad for it. The shape here is the common Soft Dome variety, a cushy and comfortable surface that doesn't get in the way while typing. Quite to the contrary, speed typists who hate to leave their home keys will definitely appreciate the presence of this pointing device just to the left of their right index finger, three buttons just slightly above their thumb.

But, for those times when a trackpad is required, the X1 Carbon has a very good one. It's 37 percent larger than that found in the earlier X1, a glass unit that's happy

to let fingers slide without much resistance. The button-free Synaptics unit is very responsive for the simple stuff, like two-finger scrolling and telling the difference between left- and right-clicks, and even more complicated gestures are well-handled, like four-finger application switching and pinch-zooming. It's among the most responsive we've yet used on an Ultrabook.

## DISPLAY AND SOUND


If there's a fault to be found in the X1 Carbon it lies here: the LCD panel that you'll be staring at just about whenever you use this thing. On paper the 14-inch unit has it where it counts, clocking in with a 1,600 x 900 resolution. But, dig a little deeper and you'll find a few reasons to be disappointed.

The first time you look at the panel you'll notice what seems to be an excessively high dot pitch — that is to say, there's a lot of space between pixels. If you have reasonably fresh eyes you'll easily be able to pick out the subtle dark lines that define the edges of pixels. Even if your eyes are perhaps a bit more tired, you'll be able to see that the whites have a bit of a gray hue to them. This is more noticeable even than on machines with lower-resolution displays, like that on the MacBook Air.

Maximum brightness here is 300 nits, a figure that's a bit underwhelming. It's a fair bit dimmer than the Samsung Series 9, for example, which clocks in at 400, and outdoor visibility in bright sunlight







The speakers emit sound through slits on the bottom side.

is virtually impossible here. But, Lenovo kindly opted for a matte display, ditching the glossy Gorilla Glass found in the prior X1. Sure, we've given up some aspect of durability, but we'll take that in exchange for the drastic reduction in eye strain when working in glare-riddled offices.

Viewing angles are adequate, but far from stellar. You can sway side-to-side for quite a ways before you start to notice any visual effects, but wander too far up or down and the contrast quickly drops off. You'll need to keep the display perfectly aligned to get the most out of this screen, something that fold-flat hinge makes easy enough, even if you're hanging from the ceiling.

The speakers are positioned on the bottom of the unit, shooting out of tiny slits angled to either side, echoing off of whatever surface you've set the laptop on to create a wider sound field than you might think possible out of such a svelte machine. When placed on a hard surface the effect is indeed quite compelling, with surprisingly loud playback and clear channel separation. Set the machine on a pillow or your lap, anything soft that

blocks those channels, and the sound gets a bit more muted — but even then it's plenty loud. Bass and tonal quality are on the poor side, but that's par for the Ultrabook course.

## PERFORMANCE

There are three possible CPUs for you to select, all sprung from Intel's verdant Ivy Bridge. Ours has the middle specification, a 1.8GHz Core i5-3427U with 3MB of L3 cache and a 1,333MHz FSB, all matched with 4GB of RAM and the HD Graphics 4000 integrated GPU. As such it's hardly a gaming machine, but it's playable in a pinch — we saw about 25fps in *Call of Duty IV* at 1,024 x 768 on default settings. When cranking through the benchmarks we noted a substantial amount of heat pumping out of the left side of the laptop, which became uncomfortably warm. It did, however, stay almost perfectly silent.

Gaming and graphics benchmarks are definitely outside of the intended applications of this machine, though, a laptop that's rather more likely to be found running a PPT than an FPS. In that kind of application the laptop performs quite well. Intel's latest chips offer a huge boost over their 2011 predecessors, and indeed this X1 is far faster than *that* X1, its PC-Mark Vantage scores about 50 percent higher. Indeed, looking at the gamut of Ultrabooks, the X1 Carbon slots in about where you'd expect it to given its CPU configuration, and you can pretty well guess where the higher-spec, 2.0GHz



BENCHMARK	PCMARK VANTAGE	3DMARK06
LENOVO THINKPAD X1 CARBON (1.8GHZ INTEL CORE I5-3427U, INTEL HD GRAPHICS 4000)	11738	WOULD NOT RUN
LENOVO THINKPAD X1 (2.5GHZ CORE I5-2410M, INTEL HD GRAPHICS 3000)	7787	3726
VIZIO THIN + LIGHT (14-INCH, 1.9GHZ CORE I7-3517U, INTEL HD GRAPHICS 4000)	13525	5443
ACER ASPIRE TIMELINE ULTRA M5 (481TG-6814, 1.7GHZ INTEL CORE I5-3317U, INTEL HD GRAPHICS 4000 / NVIDIA GEFORCE GT640M LE 1GB)	7395	9821
ACER ASPIRE S5 (1.9GHZ CORE I7-3517U, INTEL HD GRAPHICS 4000)	12895	5071
SAMSUNG SERIES 9 (13-INCH, 2012, 1.7GHZ INTEL CORE I5-3317U, INTEL HD GRAPHICS 4000)	8624	5155
MACBOOK AIR (2012, 1.8GHZ CORE I5, INTEL HD GRAPHICS 4000)	13469	5827
ASUS ZENBOOK PRIME UX21A (IVY BRIDGE CORE I7 PROCESSOR, INTEL HD GRAPHICS 4000)	10333	4550
SAMSUNG SERIES 9 (15-INCH, 2012, 1.6GHZ CORE I5-2467M, INTEL HD GRAPHICS 3000)	10580	4171
LENOVO IDEAPAD U310 (1.7GHZ CORE I5-3317U, INTEL HD GRAPHICS 4000)	8345	4549
LENOVO THINKPAD X230 (2.6GHZ CORE I5-3320M, INTEL HD GRAPHICS 4000)	8234	4891
SONY VAIO T13 (1.7GHZ CORE I5-3317U, INTEL HD GRAPHICS 4000)	8189	3847

NOTE: HIGHER SCORES ARE BETTER

Core i7 version would place, too.

Disk I/O is of course another thing, and we were not left wanting. Though of a rather limited size, just 128GB, our X1 Carbon's SSD averaged 510 MB/s (reads) and 339 MB/s (writes), which on the read side at least is right up there with the latest MacBook Air's chart-topping 551 MB/s. That'll have your latest quarterly presentation loaded in no time — or all your favorite *Quake* mods. It also helps

deliver a very respectable 21-second bootup from cold.

## BATTERY LIFE

On our standard battery rundown test, which entails looping a video with WiFi enabled, the X1 managed just over five hours before depleting its last mAh. That's on the underwhelming side of average, with many Ivy Bridge Ultrabooks pushing one or two hours





BENCHMARK	PCMARK VANTAGE
LENOVO THINKPAD X1 CARBON	5:07
SAMSUNG SERIES 9 (15-INCH, 2012)	7:29
LENOVO THINKPAD X230	7:19
SAMSUNG SERIES 9 (13-INCH, 2012)	7:02
MACBOOK AIR (13-INCH, 2012)	6:34 (OS X) / 4:28 (WINDOWS)
DELL XPS 14	6:18
HP FOLIO 13	6:08
HP ENVY SLEEKBOOK 6Z	5:51
TOSHIBA PORTEGE Z835	5:49
SONY VAIO T13	5:39
MACBOOK AIR (13-INCH, 2011)	5:32 (OSX) / 4:12 (WINDOWS)
HP ENVY 14 SPECTRE	5:30
TOSHIBA SATELLITE U845W	5:13
ACER ASPIRE TIMELINE ULTRA M3	5:11
LENOVO IDEAPAD U300S	5:08
SAMSUNG SERIES 5 ULTRABOOK (14-INCH, 2012)	5:06
ACER ASPIRE TIMELINE ULTRA M5	5:05
DELL XPS 13	4:58
LENOVO IDEAPAD U310	4:57
ACER ASPIRE S5	4:35
SAMSUNG SERIES 9 (13-INCH, 2011)	4:20
ASUS ZENBOOK PRIME UX21A	4:19
ACER ASPIRE S3	4:11
VIZIO THIN + LIGHT (14-INCH)	3:57

longer. Lenovo promises up to six and a half hours of battery life for the X1 Carbon, and we think it could manage that with the wireless switch set in silent mode. Unfortunately, Lenovo isn't offering an external battery slice for the X1 Carbon, and we don't see any connectors on the bottom that would enable them to add one in the future.

It's not all about longevity, though, and Lenovo is proud of the X1 Carbon's RapidCharge technology. We've seen that before and it, as ever, works well here. Lenovo promises five hours of battery life can be added in just 30 minutes of charging, though a full charge will take another hour. Still, for a quick airport top-off before they call your boarding zone, that's quite handy.

## SOFTWARE AND WARRANTY

Lenovo kindly kept the X1 Carbon's SSD free of most bloatware — a good thing since there's only 128GB to work with. The only real annoying bit we found was Norton Internet Security, which seemed to pop up a frightening message about our computer being unprotected every few minutes. There's a 30-day free trial but we're guessing it won't take you nearly that long to uninstall this bit of nagware. There's a link to a free trial of Microsoft Office, but you'll need to download that yourself.

Other than that, there's the usual ThinkVantage suite of apps and Lenovo's SimpleTap application, which gives a finger-friendly grid of launching apps, not



Lenovo kindly kept the X1 Carbon's SSD free of most bloatware — a good thing since there's only 128GB to work with.

wholly unlike Launchpad on OS X. This is of limited use on a touchscreen-free machine like the X1, but could be more of a help in the upcoming IdeaPad Yoga.

Again, there's a three-year warranty here, which is a nice bit of reassurance.

## CONFIGURATION OPTIONS

Though the unit we tested will run you \$1,499, the X1 Carbon starts at a hundred dollars less, with a more modest Core i5-3317U processor, clocked at 1.7GHz instead of 1.8GHz. If you wanted to upgrade from the model we reviewed, you could pay \$1,649 for a unit with the same processor, but 256GB in solid-state storage. Want 256 gigs *and* a Core i7 CPU? You're looking at \$1,849. Regardless, these all come with 4GB of RAM and Intel's HD 4000 graphics. The resolution and warranty, too, remain the same.

All pre-configured models other than the base \$1,399 unit include an Ericsson H5321gw HSPA+ WWAN and GPS module. It supports 21Mbps HSPA+ connectivity — once you've brought your own SIM. As of now there's no way to configure the higher-end X1 Carbon models



Pop in your own SIM and enjoy 21Mbps HSPA+ connectivity.

without this module, which is partly why those prices we listed are a bit higher than many others. But, expect to save about a hundred bucks by omitting this if and when Lenovo starts offering build-to-order units.

## THE COMPETITION

Until HP ships the EliteBook Folio sometime this fall, the X1 Carbon won't have much competition from other high-end Ultrabooks aimed at the business set. For now, then, we may as well compare the X1 to other premium ultraportables. Among them, our reigning favorite might be the Samsung Series 9 (\$1,300 and up), which is thinner than even the average Ultrabook, has a bright, matte, 1,600 x 900 screen and lasts an impressive seven hours on a charge. (It's also gorgeous, but then again, ThinkPad diehards will be more inclined to love the X1's understated lines.)

It's a similar story for the 13-inch







A fingerprint scanner allows one-touch boot and logins.

MacBook Air (\$1,200 and up), which offers about six and a half hours of run-time and happens to have one of the most comfortable keyboard-and-trackpad combos around. On a practical note, it's configurable with up to 8GB of RAM and 512GB of solid-state storage — a rarity for machines in this class. The biggest trade-off, perhaps, is that screen: with a 1,440 x 900 pixel count it's crisper than average, but still doesn't offer the pixel count that Lenovo (or Samsung, or ASUS or HP...) has to offer.

Speaking of ASUS, we just got our hands on the new \$1,099 Zenbook Prime UX31A and while there's lots to love (fast performance, a pretty design, much-improved keyboard and 1080p IPS display) its trackpad was awfully jumpy, even after multiple driver updates.

If you don't mind spending \$1,400 on a laptop and can suffer a little extra weight, you might want to check out the HP Envy 14 Spectre — it's a bit heavy for a 14-inch Ultrabook, but we love its glass-and-metal design, tactile keyboard



and rich 1,600 x 900 display. Bonus: it includes a generous two-year warranty and comes pre-loaded with full copies of Adobe Photoshop Elements and Adobe Premiere Elements.

Dell's XPS 14 falls into a similar vein, with its 1,600 x 900 display, and it costs less, at \$1,100. It's also one of the few bigger-screen Ultrabooks that actually justifies its heft with long battery life (nearly six and a half hours, in this case). Oh, and if you read our review of the

smaller XPS 13, you'll be glad to know Dell fine-tuned the trackpad too.

Lastly, given how expensive the X1 Carbon is, it's worth mentioning the Sony VAIO Z, even if it isn't technically an Ultrabook (these are standard-voltage processors, don'tcha know — quad-core ones, even). At \$1,600, it has a thin, 0.66-inch-thick chassis (also made from carbon fiber) and it comes standard with 8GB of RAM and a 1080p display. Interestingly,

At 300 nits, the screen is hard to see in direct sunlight.





the drives are arranged in a fast (but risk-prone) RAID 0 configuration, and you can get up to 512GB of storage, as with the MacBook Air. The real hook, though, is the external Power Media Dock, which houses a discrete GPU and optical drive. That'll set you back an extra \$400, so start counting your pennies if that's of interest.

But, before we sign off, we'll again point out that the X1 Carbon's pricing includes an HSPA+ WWAN module in all but the base configuration, something you can't often find in an Ultrabook.

## WRAP-UP

So, is the Lenovo X1 Carbon the ultimate Ultrabook? Not quite. Its display is merely fair, as is its battery life, and it's far from the cheapest choice out there. Those things are definite marks against, but if you can get past them this is a fundamentally impressive ma-

chine. It is properly thin and light and yet has none of the flimsy feeling that some of its competition offers. It also manages to be legitimately comfortable in the hand or on your lap, a description that similarly can't be applied to every other razor-thin machine.

This makes it a very consumer-friendly machine with a decidedly professional price-point and, with HSPA+ available across almost the entire range, it offers pro-level connectivity too. If you're looking for a durable, fast Ultrabook that won't weigh down your bag — and that won't scream “look at me!” while you're checking in from the coffee shop — this is absolutely it. **D**

*Dana Wollman contributed to this review.*

*Tim Stevens is Editor-in-chief at Engadget, a lifelong gamer, a wanna-be racer, and a born Vermonter.*

## BOTTOMLINE

### LENOVO THINKPAD X1 CARBON

**\$1,399+**



#### PROS

- Durable, lightweight chassis
- Solid performance
- Great keyboard and trackpad
- HSPA+ connectivity

#### CONS

- Middling display and battery life
- High cost

#### BOTTOMLINE

Lenovo's X1 Carbon is the thinnest and lightest ThinkPad yet and, while it isn't the cheapest Ultrabook on the market, it's among the best.



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REVIEW

## VIZIO THIN + LIGHT (14-INCH, 2012)



**Vizio's Thin + Light**  
enters the Ultrabook  
arena with some  
major specs and a  
swagger to match,  
but is there an  
Achilles' heel to this  
up-and-comer?  
**By Dana Wollman**

**Nine months ago**, Vizio didn't make laptops. Now, it's seemingly all our readers are writing in about. The company, best known for its value-priced TVs, is expanding into the PC market, with a collection of all-in-ones and thin-and-light notebooks. So why have we been getting so many emails asking when the heck we're going to publish a review? After all, it's not like shoppers have any shortage of choice when it comes to Windows computers.

The answer: Vizio is taking the same approach with PCs that it does with televisions, which is to





say it's offering impressive specs while undercutting its competitors. Case in point: all of Vizio's laptops have a full-metal design, solid-state drive, zero bloatware and a minimum screen resolution of 1,600 x 900. And yes, that even applies to the lowest-end notebook, which goes for \$900. Can you see now where this would be a tempting deal for folks who'd like to avoid spending \$1,100-plus on an Ultrabook? Well, for those of you who've been curious, we've been testing Vizio's 14-inch Thin + Light, and are now ready to unleash that review you've been waiting for. Read on to see if this rookie computer is as good as it looks on paper.

## LOOK AND FEEL

For a company just entering the PC market, Vizio got a lot right on its first try. For starters, its Thin + Light notebooks are fashioned almost completely out of aluminum — even on the bottom side, an area where other laptop makers often settle for plastic. What's more, that bottom surface has a rubbery, soft-touch coating that makes it comfortable to hold, and comfortable to rest on your legs (hey, it's shorts season). In general, too, Vizio went easy on the garish embellishments and used just a handful of subtle flourishes to give the laptop some personality. These include beveled edges on the lid and chassis, a glowing Vizio logo on the cover and a power adapter that glows green or orange, depending on the charging status.

## Vizio got a lot right on its first try.

Pick it up and the system feels about as nice as it looks. There isn't any creak or hollowness in the palm rest, and when you set the laptop down, the lid doesn't wobble, as is the case with other notebooks we've tested. At 3.39 pounds, it's also fairly light, at least as far as 14-inch Ultrabooks go. (This might be a good time to clarify that Vizio is calling this a thin-and-light and not an Ultrabook, but if all we're talking about are thin, portable

The Thin + Light laptop has a sleek aluminum style.



machines, then tomato, tomahto.) Our only request would have been for Vizio to squeeze a few more ports into the 0.67-inch-thick frame, or maybe even experiment with a slightly thicker chassis. On board, you'll find two USB 3.0 ports, HDMI-out and a 3.5mm headphone jack. That's a good start, but on a machine this size we would've expected to see a few more ports – namely, an Ethernet jack and an SD card reader.

## KEYBOARD AND TRACKPAD

It's at this point that perhaps Vizio got carried away in its attempts to reinvent the PC. The Thin + Light's keyboard is an odd specimen, with flat-top keys that almost blend into one another. Were it not for some slight beveling between the keys, you'd have a hard time telling one key from the other without looking down at your fingers. Indeed, it took us a day or so to master the cramped layout, but eventually we started noticing fewer errors in our typing. Still, even once we got the hang of it, we noticed that the keys didn't always register our presses. We had this problem with the space bar a few times, and also with the arrow keys (it doesn't help that the up and down ones are especially tiny). If

there's one saving grace, though, it's that the Enter, Backspace and Shift keys are pretty oversized, so it's at least easy to hit those buttons square on the nose.

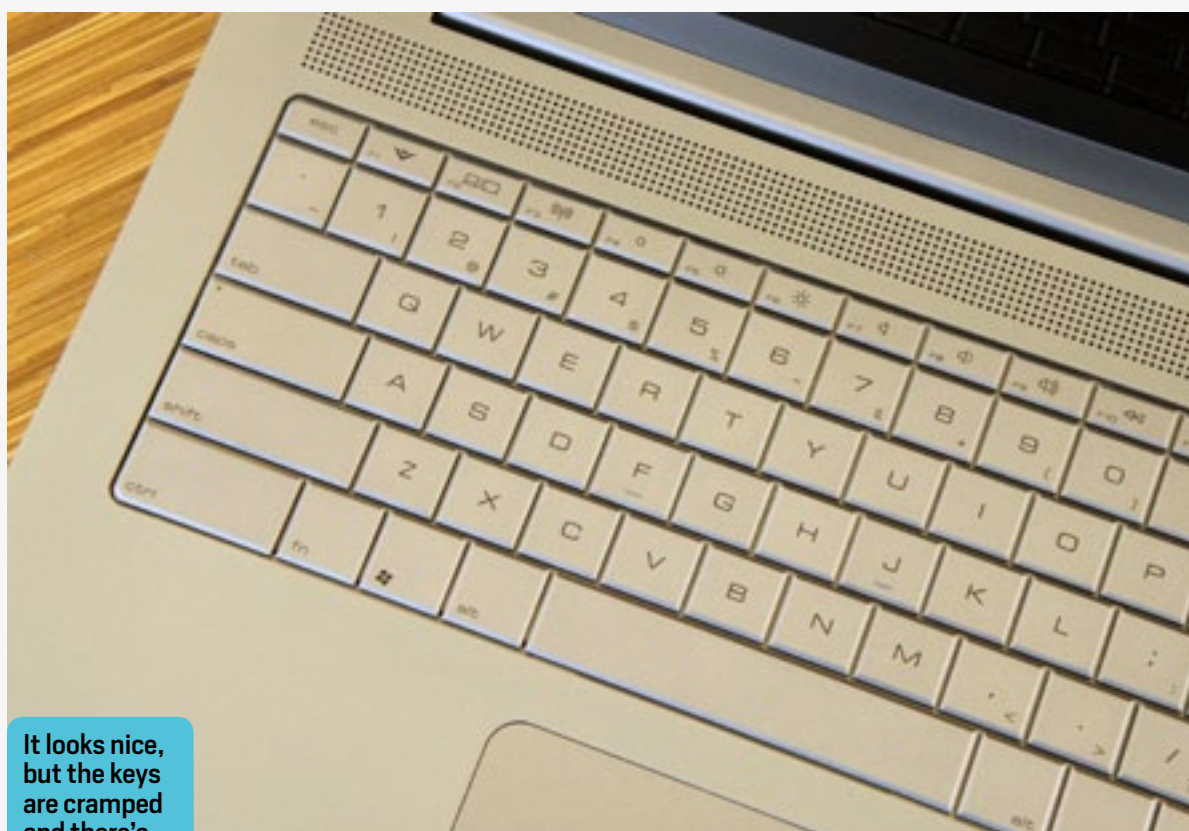
Hardly a dealbreaker, but it's worth noting that these keys aren't backlit. According to Vizio reps, the engineers were concerned that a backlit keyboard would increase the thickness of the laptop, and most backlit keyboard suffer from unsightly light bleed anyway. That said, the company is apparently considering backlighting for future models.

The Thin + Light's touchpad is a little small compared to what you'll find on other modern laptops, but it's still sufficient for two-fingered scrolling and pinch-to-zoom. The problem is, the pad just doesn't work very reliably, even after some early driver updates. For one, the touchpad offers a good deal of resistance, and moving the cursor where you want it to go can be a challenge: some-

The small, glitchy touchpad was a bit of a letdown.







It looks nice, but the keys are cramped and there's no backlight.

times it stops short on the screen, and occasionally it moves in a different direction entirely. There were a few vexing instances in which the cursor randomly jumped to a different part of the screen while we were typing, forcing us to backtrack and delete unwanted characters before carrying on. At other times, too, the pad mistook left clicks for right ones.

For what it's worth, Vizio reps seem aware of the Thin + Light's early trackpad issues and promise a driver update is coming sometime in the next few weeks. Still, the pad is frustrating enough to use as is that we can't see ourselves giving this laptop a hearty recommendation until Vizio figures it out.

## DISPLAY AND SOUND

The amazing thing about using the Vizio Thin + Light for the first time is that if you thought you resigned your-

self to a garden-variety 1,366 x 768 display, you'd think this was the best HD display you'd ever seen. In fact, Vizio's engineers were apparently as disgusted by these lower-resolution screens as you guys were, and decided that at the very least, its laptops would have a 1,600 x 900 pixel count.

(The higher-end configurations have 1080p panels.) And while we've tested many a 1,366 x 768 laptop and survived, you really can tell the difference here. This is much crisper than what you'd typically get at this, or any price.

Just keep in mind that because this is a typical TN panel (as opposed to an IPS one) the viewing angles aren't going to be anything special. Depending on how harshly lit your surroundings are, you could probably get away with crowding around the laptop and watching a movie from friends, even if it meant one of you would have to watch at an off-angle. Naturally, the whites are a little less white from the sides, but it's still easy enough to make out whatever's on screen. You'll have a little less luck if you dip the screen forward, though: we even found it difficult to type this review unless the screen was positioned at an upright angle.





They didn't  
skimp on  
pixels with  
the 1,600 x  
900 screen.

We'll say this about the sound: the volume is appreciably loud. It's louder, certainly, than the ASUS Zenbook Prime UX31A, which we happened to be testing at the same time. As for quality, though, the sound is almost indistinguishable from other laptops, which is to say it's tinny and constrained, but probably good enough for a listening party of one.

## PERFORMANCE

For the purposes of this review, we tested Vizio's top-of-the-line configuration, with a 1.9GHz Core i7 processor, Intel HD 4000 graphics, 4GB of RAM and a 256GB SSD made by Toshiba. Particularly since

we don't test many Core i7 Ultrabooks around here, it's not surprising that the Thin + Light delivers some of the fastest performance we've seen. Its score of 13,525 in PCMark Vantage is actually the highest we've seen in this class of computer, though it does seem a bit peculiar that it's almost the same score we got from a Core i5-powered MacBook Air. We would have expected the delta to be even bigger, any differences in SSDs notwithstanding. Still, we'll never complain about this kind of performance, which includes 553 MB/s read speeds, 530 MB/s writes and an 18-second startup time.

Graphics-wise, the Thin + Light scored 5,443 in 3DMark06, which is at





BENCHMARK	PCMARK VANTAGE	3DMARK06
VIZIO THIN + LIGHT (14-INCH, 1.9GHZ CORE I7-3517U, INTEL HD GRAPHICS 4000)	13,525	5,443
ACER ASPIRE TIMELINE ULTRA M5 (481TG-6814, 1.7GHZ INTEL CORE I5-3317U, INTEL HD GRAPHICS 4000 / NVIDIA GEFORCE GT640M LE 1GB)	7,395	9,821
ACER ASPIRE S5 (1.9GHZ CORE I7-3517U, INTEL HD GRAPHICS 4000)	12,895	5,071
SAMSUNG SERIES 9 (13-INCH, 2012, 1.7GHZ INTEL CORE I5-3317U, INTEL HD GRAPHICS 4000)	8,624	5,155
MACBOOK AIR (2012, 1.8GHZ CORE I5, INTEL HD GRAPHICS 4000)	13,469	5,827
ASUS ZENBOOK UX31E (1.7GHZ CORE I5-2557M, INTEL HD GRAPHICS 3000)	10,508	4,209
ASUS ZENBOOK PRIME UX21A (IVY BRIDGE CORE I7 PROCESSOR, INTEL HD GRAPHICS 4000)	10,333	4,550
LENOVO IDEAPAD U300S (1.8GHZ CORE I7-2677M, INTEL HD GRAPHICS 3000)	9,939	3,651
SAMSUNG SERIES 9 (15-INCH, 2012, 1.6GHZ CORE I5-2467M, INTEL HD GRAPHICS 3000)	10,580	4,171
LENOVO IDEAPAD U310 (1.7GHZ CORE I5-3317U, INTEL HD GRAPHICS 4000)	8,345	4,549
LENOVO THINKPAD X230 (2.6GHZ CORE I5-3320M, INTEL HD GRAPHICS 4000)	8,234	4,891
SONY VAIO T13 (1.7GHZ CORE I5-3317U, INTEL HD GRAPHICS 4000)	8,189	3,847

the high end of what we've been seeing from Ivy Bridge laptops with integrated graphics. Still, without a discrete GPU, even the best Ivy Bridge machines struggle with gaming — this guy couldn't even break 30 frames per second in *Call of Duty 4*, and that was with the default settings (1,024 x 768 resolution).

## BATTERY LIFE

Oh dear. It's never a good thing when a company promises its 14-inch laptop

will last five and a half hours, *tops*. Indeed, the Thin + Light didn't make it nearly that long in our video rundown test, dying out after less than four hours. Granted, our particular battery life test is taxing, much more so than the MobileMark benchmark Vizio uses in its testing labs. Still, pretty much every 14-inch Ultrabook we've tested, from the HP Envy 14 Spectre to the Samsung Series 5 to the Acer Aspire M5, has lasted five hours, if not more. Suffice to say, that's not ac-



LAPTOP	BATTERY LIFE
VIZIO THIN + LIGHT (14-INCH)	3:57
SAMSUNG SERIES 9 (15-INCH, 2012)	7:29
LENOVO THINKPAD X230	7:19
SAMSUNG SERIES 9 (13-INCH, 2012)	7:02
MACBOOK AIR (13-INCH, 2012)	6:34 (OS X) / 4:28 (WINDOWS)
HP FOLIO 13	6:08
HP ENVY SLEEKBOOK 6Z	5:51
TOSHIBA PORTEGE Z835	5:49
ASUS ZENBOOK UX31E (2011)	5:41
SONY VAIO T13	5:39
MACBOOK AIR (13-INCH, 2011)	5:32 (OS X) / 4:12 (WINDOWS)
HP ENVY 14 SPECTRE	5:30
TOSHIBA SATELLITE U845W	5:13
ACER ASPIRE TIMELINE ULTRA M3	5:11
LENOVO IDEAPAD U300S	5:08
SAMSUNG SERIES 5 ULTRABOOK (14-INCH, 2012)	5:06
ACER ASPIRE TIMELINE ULTRA M5	5:05
DELL XPS 13	4:58
LENOVO IDEAPAD U310	4:57
DELL XPS 14Z	4:54
ACER ASPIRE S5	4:35
SAMSUNG SERIES 9 (13-INCH, 2011)	4:20
ASUS ZENBOOK PRIME UX21A	4:19
ACER ASPIRE S3	4:11

ceptable for a product that was built to be mobile, and that should have room for a larger battery.

## SOFTWARE AND WARRANTY

Even more than that high-resolution display or all-metal chassis, *this* is how Vizio decided to one-up all those seasoned laptop makers. Every unit ships with Signature, a clean, crapware-free image of Windows that was approved by Microsoft (and obviously Microsoft doesn't want Windows to be known for its bloat, so it has a clear motivation to keep the junk out). Indeed, you won't find any third-party software other than Adobe Reader.

Other than that, it's Microsoft Office Starter edition, which you'll find on every copy of Windows; Microsoft Security Essentials; and Skype, which is, of course, now a part of the Microsoft family as well. Naturally, even if there were a long list of third-party programs, we could've uninstalled each and every one of them. But there's something to be said for booting up a computer for the first time and loading up a near-blank desktop. It makes you wonder when Dell and HP and Acer and every other PC maker will get with the program.

There is one unorthodox thing about Vizio's PCs, and that's that you can use a function key — excuse us, the V-Key — to launch certain multimedia sites, such as Netflix or Amazon Instant Video. That key is actually just the F1 button with Vizio's logo painted on it, and when you





hit it for the first time you'll be taken to a browser-based setup. (See? Even Vizio's own application doesn't eat up precious megabytes on your hard drive.) All told, it's a harmless little gimmick, but it's also not terribly useful. It would seem that Vizio wanted to tie in these streaming services as a way of calling attention to its TV know-how, but if you ask us, the company already did that by including such a lovely display.

The Thin + Light has a one-year warranty, which is typical for a consumer PC, regardless of the price.

## CONFIGURATION OPTIONS

Though the unit we tested would cost you \$1,200 if you were to buy it off Vizio's website, the laptop actually starts at \$900, with a Core i3 processor, four gigs of RAM and a 128GB SSD. For \$950, you get a Core i5 CPU instead, but otherwise the specs are the same. That means if you want 256GB of storage, the \$1,200 Core i7 model is your only option. Regardless of which one you pick, you'll get a 1,600 x 900 screen and Intel's HD 4000 graphics.

It's a similar deal for the 15.6-inch Thin + Light, which starts at \$950 and goes up to \$1,250. Here, too, there's a Core i3, i5 and i7 configuration, and

you'll need to go with the highest-end model to get those 256 gigs of storage. In the case of these 15-inch machines, though, the screen resolution is 1,920 x 1,080, not 1,600 x 900.

## THE COMPETITION

A laptop with an all-metal design, SSD and a 1,600 x 900 screen begs comparison with other high-end thin-and-lights, don'tcha think? Spec-wise, at least, the Thin + Light is aggressively priced. Whereas the Core i5 version costs \$950, for instance, the ASUS UX31A with a Core i5 CPU and 128GB SSD goes for about \$1,100. Still, specs aren't everything, are they? Having tested both laptops, we can say that even though the UX31A also suffers from trackpad issues, it does have a more comfortable keyboard, and also lasts longer on a charge. Meanwhile, the performance is similar, the design is

There's some serious build quality here; no creaks or flex.



equally sharp and the IPS screen has a higher resolution, so there's an argument to be made that there's an upside to paying \$150 more for it.

Ditto for the MacBook Air, which costs \$200 more, but offers a superior keyboard, trackpad and battery life. Sure, the pixel count is 1,440 x 900, but as we've tried to demonstrate, a higher-res screen isn't much consolation when the computer has some serious usability flaws.

## WRAP-UP

We wanted to love Vizio's underdog first laptop, and we did when we first took it out of the box. Despite having never made a PC before, the company managed to put out something truly beautiful, with a sharp screen, solid build quality, fast performance and a completely clean version of Windows. We applaud the implicit chal-

lenge to the HPs and Dells of the industry, which have gotten sloppy with some of their designs, and *still* load up computers with bloatware, thinking consumers won't put up a fight. Unfortunately, though, Vizio still has a good deal to learn about building PCs, and its inexperience shows in the jumpy trackpad, uncomfortable keyboard and wretchedly short battery life. We suspect the company will have plenty of fodder when it returns to the drawing board to plan its next generation of laptops. For now, though, we're hesitant to recommend the Thin + Light series based solely on looks, price or specs — after all, a \$900 MSRP doesn't make this thing any easier to use. **D**

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*Dana Wollman is Reviews Editor at Engadget, a marathoner, lover of puns and a native Brooklynite.*

## BOTTOMLINE

### VIZIO THIN + LIGHT (14-INCH, 2012)

**\$900+**



#### PROS

- Lovely all-metal design
- Crisp 1,600 x 900 screen
- Fast performance

#### CONS

- Short battery life
- Jumpy trackpad, uncomfortable keyboard
- No SD slot

#### BOTTOMLINE

Vizio's first laptop offers fast performance and zero bloatware in an attractive package, but it's marred by some serious usability flaws.





DISTRO  
08.17.12

# REVIEW

## SAMSUNG GALAXY NOTE 10.1



The S Pen-wielding  
**Galaxy Note 10.1**  
underwent a massive  
makeover following  
its debut. But did  
Samsung's overhaul  
go too far?  
By Joseph Volpe

**Consider it the fallout** from a decade-plus of reality TV, but our made-by-the-masses approach has expanded into new territory: technology R&D. Or so Samsung's very public handling of the Galaxy Note 10.1 would have us believe. Thrust into an *American Idol*-like spotlight at Mobile World Congress earlier this year, the still-unfinished slate, a follow-up to the pen-enabled Galaxy Note phone, was forced to perform for hordes of skeptical insiders. Sure, there was raw talent on display and we could see the promise of this 10-inch contender (we said as



much in our exhaustive preview), but it was also clear the company was testing consumer waters, fishing for a vote of confidence before continuing down the development track.

Does this make Samsung's latest flagship the Kelly Clarkson of the tablet category? It's an apt analogy, if you think about it: Kelly wants to be country, the Note 10.1 wants to be a pro-designer tool, but neither is allowed. Why? Well, simply put, products sell better when they're made more palatable for a wider range of tastes. Which is why the company used MWC to gauge popular opinion before molding its untested product into something with a broader appeal. Ultimately, that meant a drastic makeover: since MWC, the Note 10.1 has received a slot for that S-Pen, streamlined software, a quad-core Exynos 4 chip and two storage

configurations: 16GB / 32GB, priced at \$499 and \$549, respectively.

So it now has more horsepower under the hood, that much is assured, but is that chip enough to boost the Note 10.1's mass appeal? Will savvy shoppers be able to forgive that relatively low-res 1,280 x 800 display? Will its Wacom digitizer elevate this slate past its more generic Android and iOS rivals? Or will that feature hamper its widespread appeal, attracting mainly creative professionals? Let's find out if the Note 10.1 can succeed as the multitasking everyman's go-to tablet.

## HARDWARE

For better or worse, Samsung's sticking to the durability of its signature plastic enclosures. Brushed aluminum backs, it would seem, are for other OEMs. So if premium builds are tops on your check-

The Note's post-MWC makeover included an S Pen slot.



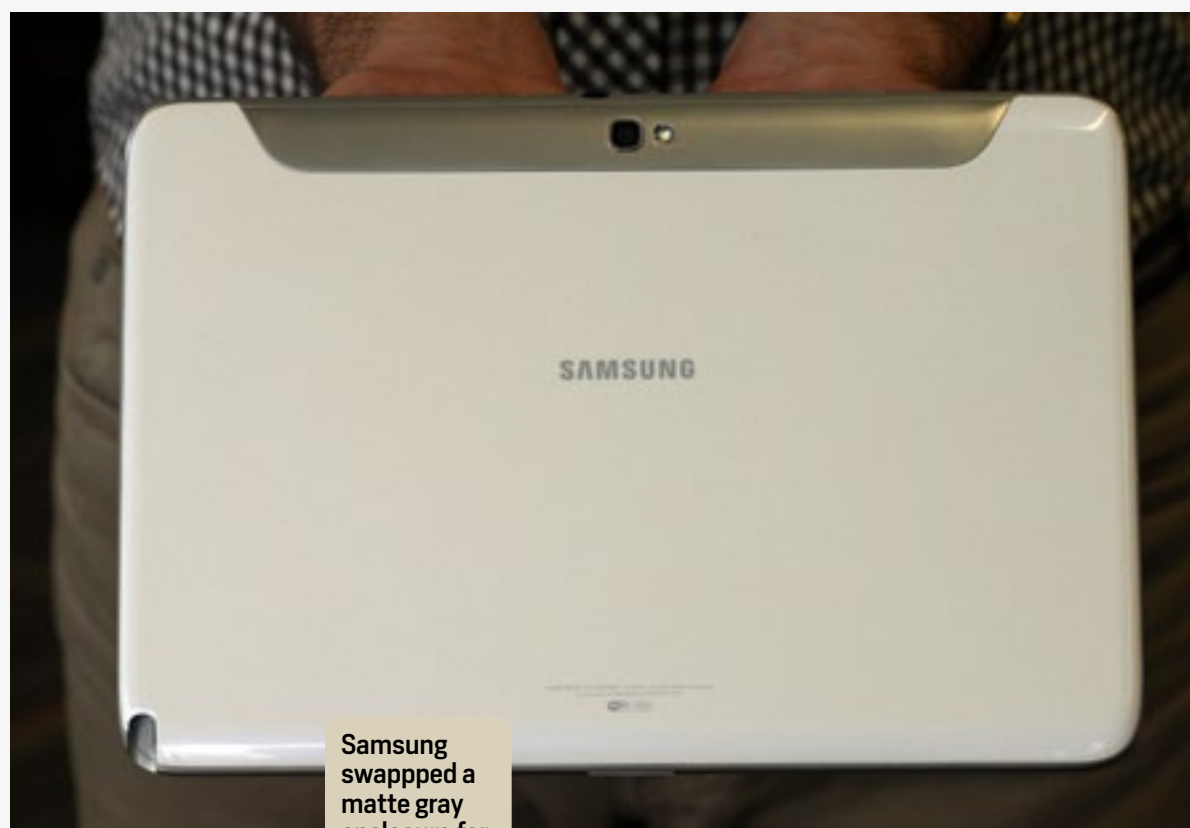


list, you can safely stop reading now. In its prototype form, the Note 10.1 felt like a luxury item, thanks to its matte enclosure (then gunmetal gray). But in a surprising reversal of course, that subdued finish has since vanished, only to be replaced with the same sort of glossy backing used on the OG 10.1. It's no small

wonder that the company made this change, given its bloated lineup of near-identical tablets. This is an Android slate that calls attention to itself, though it might not be the right kind.

There's no two ways about it: the Note 10.1 looks and feels kind of cheap. Starting with our most serious complaint, it's prone to the squeaks and creaks of inferior budget devices, which is definitely not something you'd associate with a \$499 product — let alone a flagship. Despite our protestations, though, this is Samsung's M.O. But, as with the company's other halo product, the Galaxy S III, we ultimately decided it's best to make peace with this lack of design flair and instead try to appreciate the feature set that makes it a stand-out device.

Back when it was still in development, the Note 10.1 had one glaring flaw: the lack of an S-Pen slot. That oversight's since been remedied and as a result, the



Samsung swapped a matte gray enclosure for a glossy rear.

chassis is a tad wider at 0.35 x 7.1 x 10.3 inches (8.9 x 180.4 x 261.6mm), allowing it to accommodate that housing along the bottom right edge. On the surface, that's about that's about the extent of the tablet's alterations (take note: the HSPA+ global version adds a SIM slot for voice and data use).

The arrangement of its ports and hardware keys have remained unchanged, matching the layout on the Galaxy Tab 2 10.1. There's a proprietary charging slot on the bottom edge, a dual-speaker setup flanking the screen and a power button, volume rocker, microSD slot (supporting cards up to 64GB), an IR blaster and 3.5mm headphone jack up top. Around back, the Note 10.1 is completely blank, showcasing only Samsung's logo. You will, however, find a silver strip along the upper half of the lid, which houses the 5-megapixel rear camera (up from 3 megapixels when it was first announced)



and a single LED flash. As for the module's companion 1.9-megapixel front-facer, it sits above the display along with an ambient sensor.

Perhaps the most important changes here are the ones Samsung made to the Note 10.1's internals. Whereas it was announced with a dual-core CPU, the company's swapped that out for the more powerful quad-core Exynos 4 clocked at 1.4GHz — and what a difference four cores makes. To complement this processing might, Samsung threw in a healthy 2GB RAM and a 7,000mAh battery to keep the experience afloat. We'll delve deeper into the performance later on, but rest assured this tab can take whatever you throw at it and then some.

So the overall construction holds fast to the tried-and-true approach of Samsung devices past, but how does it feel in hand? Well, considering its dimensions have expanded, it still feels reassuringly light and manageable. Weighing 1.31lbs (0.6kg), it's comfortable to hold in one hand while you grip the S-Pen in the other, though the edges could do with a bit of softening.

And how about that S-Pen? Has it seen an evolution? Are there any additional bells and whistles packed into it? Does its oblong shape make for a natural fit in-hand? Well, yes, no and sorta kinda. Allow us to elaborate. For all its girth, the S-Pen still feels as light as a feather — and that's not necessarily a good thing. Like the tablet itself, the pen conveys an inferior and ultimately disposable feel.

For what it's worth, there's a well-placed function button located on the side of the pen that's easy to find with your finger. If that's not impressive enough, Samsung will sell two additional pens — one with an eraser tip and the other a larger holster for a more natural grip.

Ding, ding, ding. That's how many times the bell should ring to count out the Note 10.1's 1,280 x 800 TFT LCD display. Samsung obviously made a compromise to keep costs down, but there's really no reason for the company to have settled on such a middling display. When we previewed the tablet it was a work in progress, so the forgettable display was easier to forgive — Apple's new iPad had just seen a public launch, leaving Samsung plenty of time to rejigger its part list and potentially bump that screen to 1,920 x 1,200 resolution. Yet, the company didn't and we remain confused.

Still, it's a serviceable panel: its colors are balanced (helped by a Dynamic and Movie mode) and viewing angles are sharp, though the screen does fall prey to a little washout and glare. Mainly, we're frustrated by the tab's pixel density, and we can't imagine graphic designers and other creative types will be impressed either.

## PERFORMANCE AND MULTITASKING

The guts of the Note 10.1 should be a source of pride for Samsung's engineers, and nowhere is this more evident than in the tablet's slick multiscreen

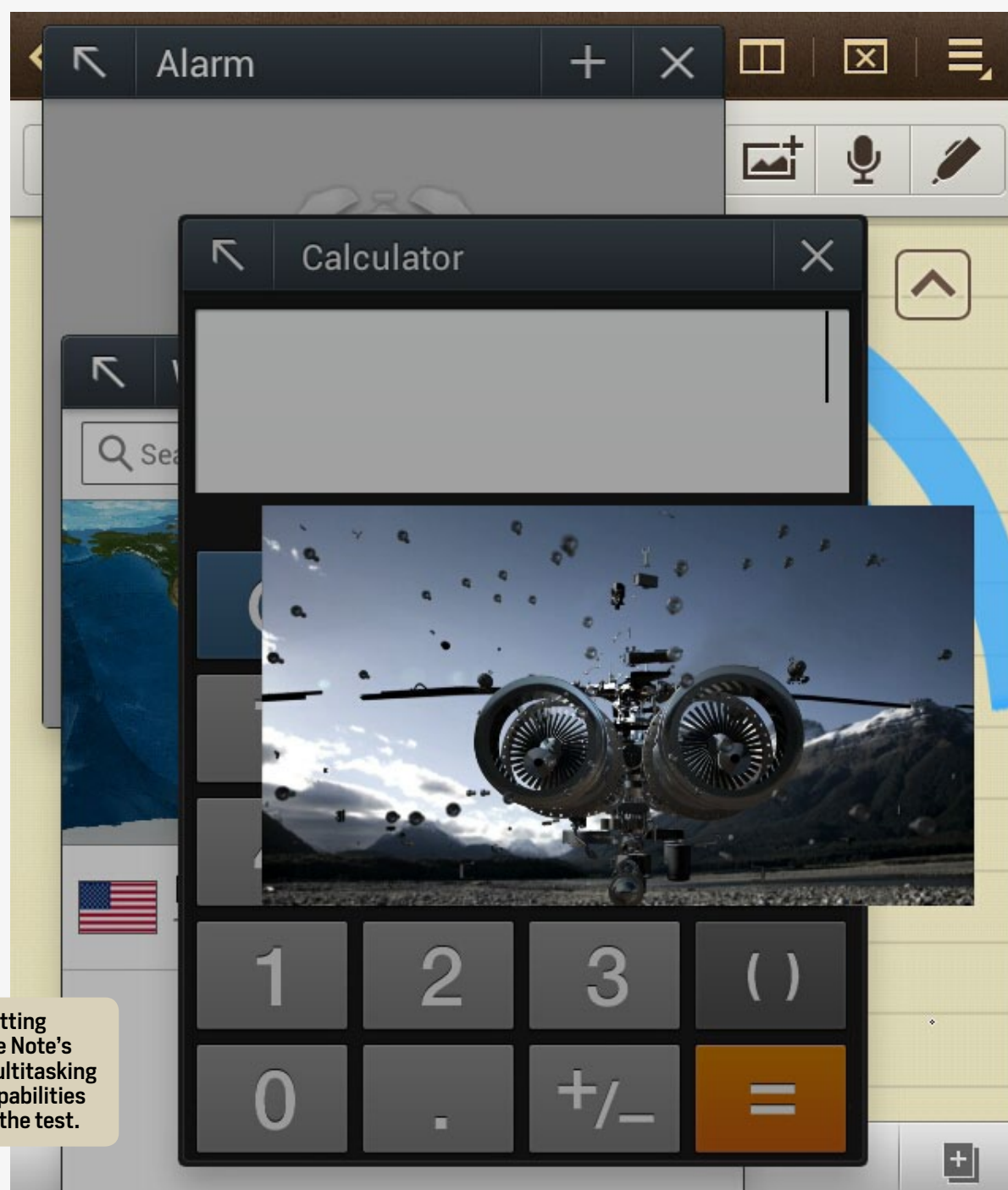




implementation (more on this in a moment). But while anecdotal software impressions can paint an abstract picture of what's happening under the hood, benchmarks lay out a blueprint for what's truly possible, and hint at what potential might be lying untapped. Since the tab's spec list is an uneven mix, we pitted it against a range of contemporary Android slates that share some of the same traits — be it a similar resolution, multi-core CPU or Android 4.0 as an OS. In this instance, many of the rivals we selected — Acer's Iconia Tab A700, ASUS' Transformer Pad TF300 and Transformer Pad Infinity TF700 — pack Tegra 3 internals. (The dual-core Galaxy Tab 2 10.1 does not.) Yet, despite being armed with such considerable horsepower, none proved a fair match for Samsung's proprietary chipset. That's not to say the Note 10.1 notched undisputed wins across the board; we logged a marginal AnTuTu loss and a Nena-mark result that put in on par with

all those Tegra 3 tablets we mentioned.

So about that multiscreen option. This feature, which wasn't demoed on the original model announced at MWC, affords a convenient split-screen view. All told, you can choose from six apps — S Note, Gallery, Video, Browser, Polaris Office and Email. But the multitasking fun doesn't end there: power users can load a pop-up video player on the upper half of the screen, call up various of mini apps from an onscreen shortcut or drag and drop clipboard content from the browser or Gallery to S Note and Polar-



Putting the Note's multitasking capabilities to the test.



BENCHMARK	SAMSUNG GALAXY NOTE 10.1	ACER ICONIA TAB A700	ASUS TRANSFORMER PAD INFINITY TF700	ASUS TRANSFORMER PAD TF300	SAMSUNG GALAXY TAB 2 10.1
QUADRANT	5,695	3,311	4,685	3,695	2,602
LINPACK SINGLE- THREAD	56.6	43.3	N/A	41.7	35.6
LINPACK MULTI- THREAD	160.3	94	N/A	89.83	61.3
NENAMARK 1 (FPS)	60	60.8	N/A	60.3	29.5
NENAMARK 2 (FPS)	58.5	37.9	N/A	46.9	19
VELLAMO	2,394	1,283	1,475	1,320	WOULD NOT RUN
ANTUTU	11,962	10,499	12,027	N/A	N/A
SUNSPIDER 0.9.1 (MS)	1,193	1,970	2,012	2,120	2,222
GLBENCHMARK EGYPT OFFSCREEN (FPS)	97	59	75	N/A	N/A
CF-BENCH	13,157	11,567	7,874	N/A	N/A

SUNSPIDER: LOWER SCORES ARE BETTER

is Office. During our testing, we launched as many as eight apps simultaneously, which appeared to have no detrimental effect on video playback and only slightly hampered the slate's overall response time. In real-world usage, you'd be hard-pressed to find a scenario where such extreme multitasking is even necessary, and we suspect that workhorse potential will satisfy even the most discerning power users.

As you might expect, the Note 10.1 delivers consistently solid performance unless burdened with an unrealistic workload. All told, the tablet delivers a snappy, fluid experience, which happily doesn't include many jarring transitions.

## BATTERY LIFE

The Note 10.1 comes in two flavors: HSPA+ and WiFi-only (the former is already available at online retailers like Negri Electronics). For now, at least, only the WiFi version will be available in the US. So while we can't say how long the tab will last when tethered to an always-on 3G connection, we can speak to the longevity of the WiFi-only variant. As it happens, this is the same 7,000mAh battery used in the Galaxy Tab 2 10.1, except here it's tasked with supporting a quad-core processor. How does it fare? With light to moderate use, it's easy to spread one full charge cycle over the span



BATTERY LIFE	
SAMSUNG GALAXY NOTE 10.1	8:00
SAMSUNG GALAXY TAB 7.7	12:01
APPLE IPAD 2	10:26
ACER ICONIA TAB A510	10:23
ASUS EEE PAD TRANSFORMER PRIME	10:17 / 16:34 (KEYBOARD DOCK)
SAMSUNG GALAXY TAB 10.1	9:55
APPLE IPAD (2012)	9:52 (HSPA) / 9:37 (LTE)
APPLE IPAD	9:33
ASUS TRANSFORMER PAD INFINITY TF700	9:25
MOTOROLA XOOM 2	8:57
SAMSUNG GALAXY TAB 2 (10.1)	8:56
HP TOUCHPAD	8:33
ASUS TRANSFORMER PAD TF300	8:29 / 12:04 (KEYBOARD DOCK)
ACER ICONIA TAB A700	8:22
ACER ICONIA TAB A200	8:16
SAMSUNG GALAXY TAB 7.0 PLUS	8:09
AMAZON KINDLE FIRE	7:42
GALAXY TAB 2 7.0	7:38
ACER ICONIA TAB A500	6:55

of three days — that's with some casual browsing, streaming video consumption, social media monitoring and brief photo-taking. But for as long as the device might last you in the real world, it's also excep-

tionally slow to recharge, so plan accordingly and don't say we didn't warn you.

Under the duress of our more formal battery rundown test, which entails looping a video off local storage with the screen brightness fixed at 50 percent, the Note 10.1 held out for a solid eight hours. Again, bear in mind that figure represents the strain of both the Exynos 4 and the 10-inch 1,280 x 800 screen. Had Samsung chosen to boost the display quality to full HD, this real-world result would have depreciated even further, forcing the company to go with a bigger battery and a weightier tablet. Even so, this showing places the Note 10.1 far down on the tablet totem pole, smack dab between the Kindle Fire and Galaxy Tab 7.0 Plus — not exactly a flattering comparison.

## SOFTWARE AND S PEN APPS

In a perfect world, the Note 10.1 would hit retail running Jelly Bean right out of the box. That's our dream scenario for this and every other Android device, but as we've grudgingly come to accept, most manufacturers want to put their individual stamp on Google's unified operating system. And so, we're faced with a skinned version of Ice Cream Sandwich, now bumped to 4.0.4 and predictably cloaked in Samsung's TouchWiz UX. Purists shouldn't have much difficulty acclimating to this particular overlay as it's actually quite light, though it is stocked up with 21 pre-loaded apps — Kno, Barnes & Noble



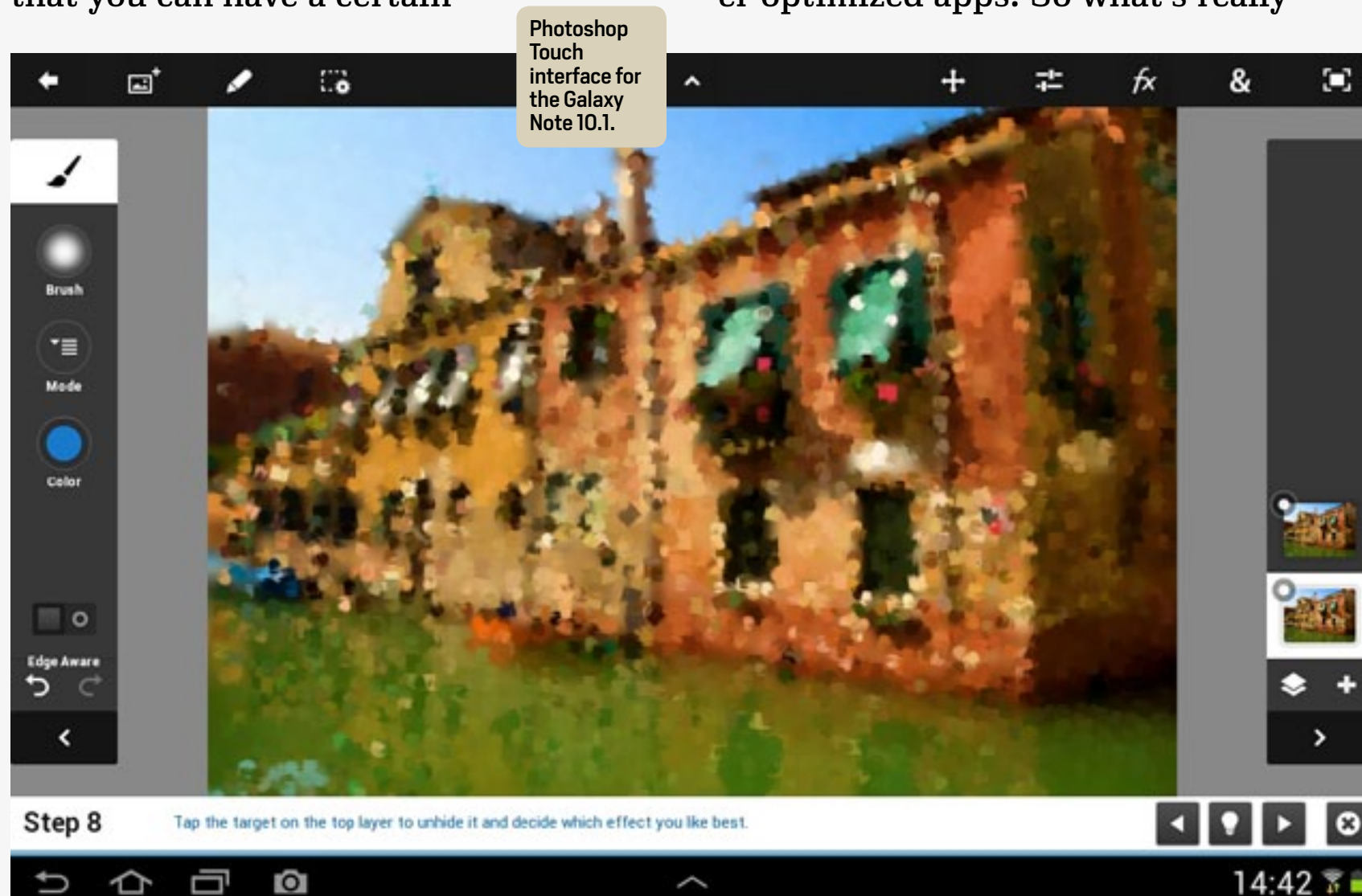


Nook, Netflix, Peel Smart Remote and Dropbox, just to name a few. Samsung assures us an upgrade to Android 4.1 will arrive sometime this year, so expect more concrete news on that front in the coming months.

To speak of Ice Cream Sandwich's ins and outs is to rehash yesterday's news. With that in mind, we won't re-tread such familiar territory. Instead, let's focus on what Samsung's done to optimize the tablet for that S-Pen. From the moment you retrieve the stylus from its in-shell holder, a vertical mini-menu slides out from the screen's right edge displaying five optimized applications and a settings option. This shortcuts toolbar is customizable in that you can have a certain

app open when you remove the pen from its slot. Right now, only five applications are designed to take specific advantage of this functionality: S Note, S Planner, *Crayon Physics*, Photoshop Touch and Polaris Office. And, as with the Galaxy Note phone, the S-Pen can also be used to take screenshots (just long-press the function button while touching the pen to the screen).

Samsung's already made the S-Pen's SDK available to developers, so there's a chance the Note 10.1 could find much richer support in the future. Realistically, though, users will have to make do with Samsung's curated software suite or use S Suggest (the company's recommendation engine) to find other optimized apps. So what's really



changed since we last saw Note 10.1 in March? For starters, the S-Pen's sensitivity level has been increased to an impressive 1,024 degrees of pressure. You won't have much need for such nuanced touch support with general use, but fire up PS Touch or S Note and you'll begin to appreciate the precision. The same goes for the tablet's palm rejection — the ability for the slate to detect stylus input while your hand rests on the screen. This, too, has been refined since we took that earlier build for a spin.

Optimized app support would seem to be the logical means to effect successful S-Pen implementation throughout the slate, but Samsung's taken it one step further, tossing in the mouse-like ability to hover (aided

by an optional icon setting) and trigger dropdown menus when browsing web sites. It's a small flourish, but one that catapults the Note 10.1 past other devices, transforming it into a bona fide productivity tool.

Much has been said about the Note 10.1's inclusion of PS Touch, an app that normally costs \$10 in Google's Play store. Though it's a pared-down version of the full desktop program used by pros, it does offer a robust suite of tools that should please pros and amateurs alike. Samsung's worked closely with Adobe to hone the app so that first-timers adjusting to stylus-guided navigation will find the experience intuitive. To that end, there's a collection of tutorials ready to hand-hold newbs through the post-production process.

Giving the S Pen's improved sensitivity a go in S Note.



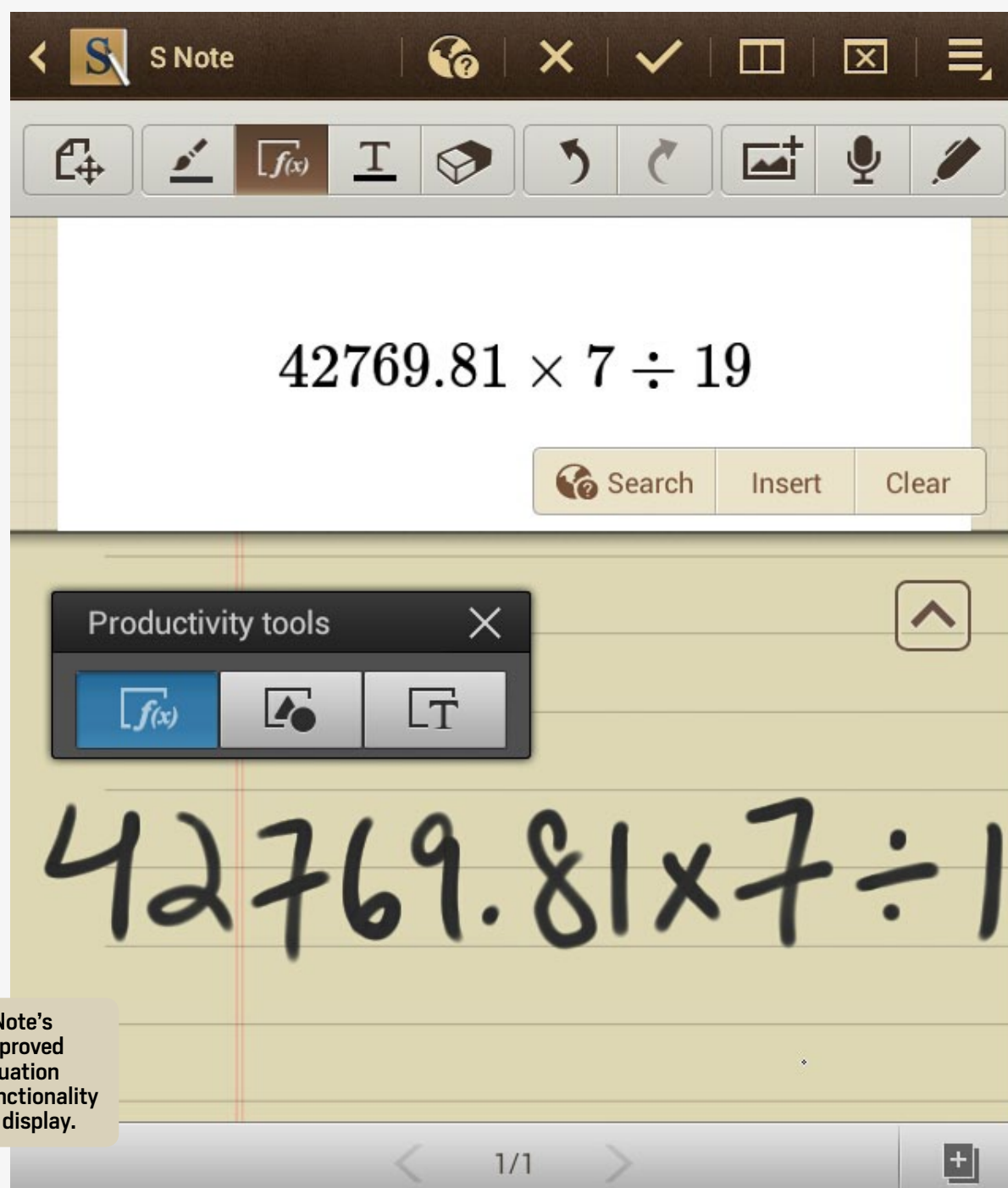


Notably absent, however, is Adobe's other Photoshop-like companion app, Ideas. Even odder, it was installed on the pre-production model we first saw at MWC and then tested in our preview. Fortunately, its absence won't negatively affect users, as that app is basically a distilled version of PS Touch, just with fewer practical applications. We're not sad to see it go, and we also won't miss S Memo, another pre-release app that's been kicked to the curb. Like Ideas, Memo was more or less a redundancy, a sandboxed version of S Note that had no reason for existing on its own. Unlike Ideas, however, Samsung chose to fold S Memo into S Note as a template option — exactly where it always belonged.

Otherwise, the majority of S Note's functions have stayed the same. Users can still choose from an assortment of pen options, brush sizes and colors for handwriting-based input or opt for text-based input using the onscreen keyboard which, thanks to the company's tweaking, is now

offered in three layouts: traditional QWERTY; Floating, which permits users to adjust its onscreen placement; and Split, Samsung's take on a thumb keyboard. Menu options are present to export your creations in .pdf, .jpg, .snb or text format and send via email, Dropbox, Bluetooth or WiFi Direct.

Handwriting recognition on the Note 10.1 is leaps and bounds ahead of where it was the last time we tested this thing. Much to our delight, the tablet's software was able to correctly make sense



S Note's improved equation functionality on display.





of our illegible cursive, translating our chickenscratch into proper text. Take the time to write neatly in print and you'll find no fault with the slate's powers of comprehension. Even the shape function has been enhanced so that it now more consistently rearranges sloppy geometric figures into appropriate configurations.

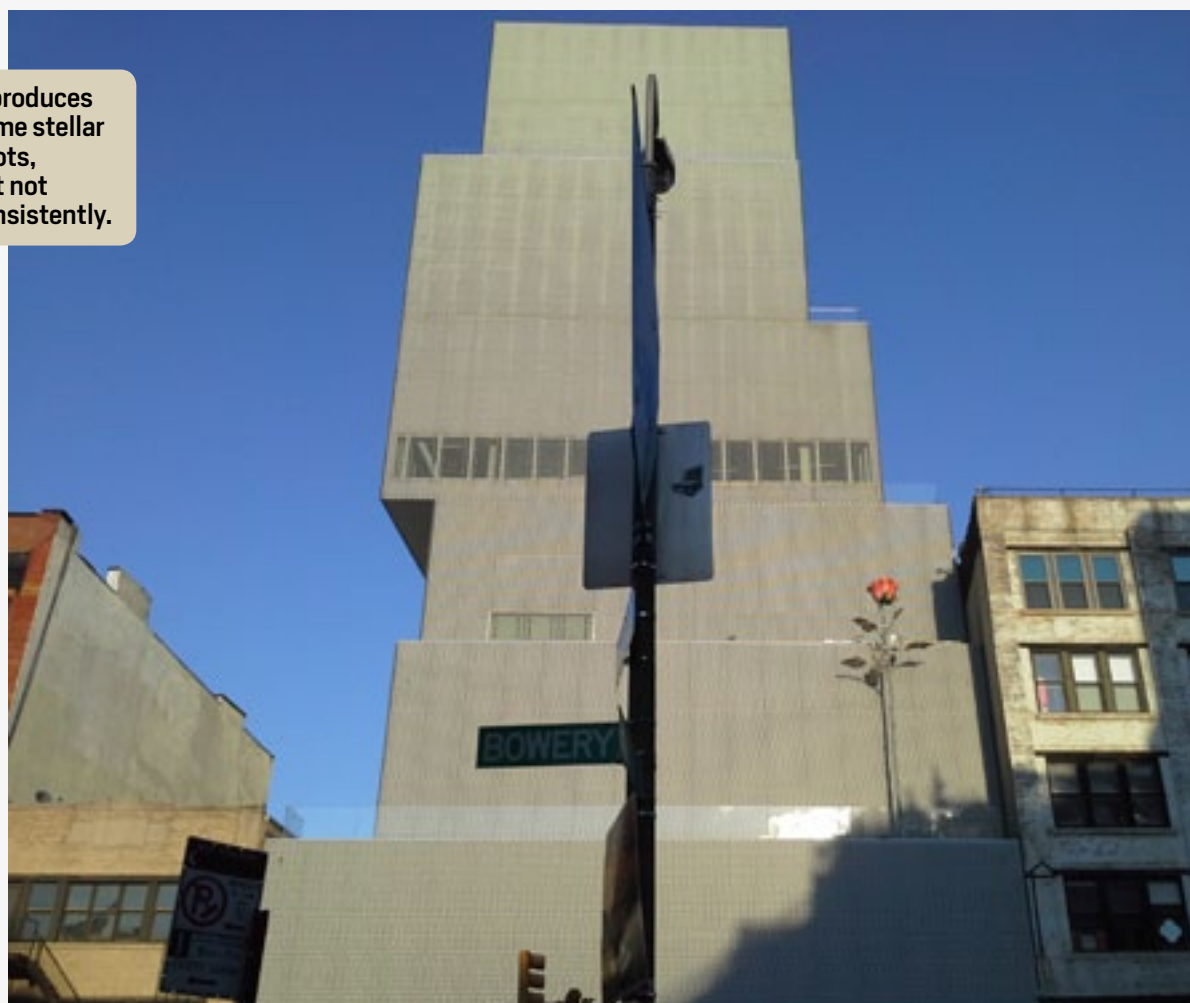
But the most noticeable and welcome improvement is actually the mathematical function, of all things. Users that input equations into the slate will be presented with a search option on the upper half of the screen, thanks to a partnership with Wolfram Alpha. Select that, and the Note 10.1 immediately segues into multiscreen mode, pulling up the browser and displaying a list of responses tailored to that specific query. Again, it's a minute touch, but on the whole, it helps to elevate this Samsung slate above its run-of-the-mill Android competition.

## CAMERA

The Note 10.1 should not be your go-to for photography or at least, not the device you rely on for fleeting moments of inspiration. No, this slate's rear 5-megapixel module doesn't handle impromptu image capture with

any sense of skill. It's actually downright frustrating with its focusing difficulties and the considerable lag between the moment you trigger the onscreen shutter button and the final result. During our photographic walkabout in downtown New York City, we found ourselves snapping several takes of the exact same image and never quite landing on a still that met our expectations. Also, the tab's lack of a full HD screen is extremely apparent here, as it led us to believe on more than one occasion that the images we'd shot were of inferior quality. That wasn't totally the case, as our final batch of 2,560 x 1,920 shots did turn up some above-average pictures with an acceptable level of detail and depth of field. On the whole, though, photos tended to have a

It produces some stellar shots, but not consistently.



blurry quality — softly lit and filtered, despite the abundant outdoor lighting.

The included camera UI is no different than that of other Samsung-branded tablets and smartphones, though it does offer up Share shot and Buddy photo share — two smart functions that debuted on the Galaxy S III and which send photos to other devices via WiFi Direct. Aside from those new settings, the rest is your usual assortment of scene and shooting modes, toggles for ISO, white balance and exposure, as well as a panorama option.

The 720p video capture mode yields similarly half-baked results. Playback suffers from similar hazy image quality and also appears quite shaky due to a lack of image stabilization. Our audio, for the most part, was distinct, if a tad muffled, but then again we happened to catch a reprieve from the crush of surrounding traffic.

## THE COMPETITION

Starting at \$499, Samsung's base Note 10.1 model seems a reasonable enough buy when you factor in the addition of the S-Pen, PS Touch, Exynos 4 processor and 16GB of storage. That is, until you cast a glance at other Android tablets of equal cost, like ASUS' Transformer Infinity Pad TF700, which boasts a crisper 1,920 x 1,200 display, double the storage (32GB) and a quad-core Tegra 3 CPU. That across-the-board spec bump alone should give you pause consid-

ering these dueling slates both run skinned ICS and are separated by a stylus alone. But shift your gaze to yet another similar Google-fied offering, Acer's Iconia Tab A700, and the path to purchase becomes fuzzier, as that tablet manages to offer the same top-shelf specs at \$50 less — an excellent proposition that, again, lacks only a built-in digitizer.

What about the iPad? Indeed, Apple's tidy iOS ecosystem is where most consumers will instinctively want to invest their dollars based on the tab's nigh-ubiquitous market death grip. And we'd be hard pressed to direct their attention otherwise since Cupertino's newest tablet iteration lays claim to the best panel available today — a 2,048 x 1,536 Retina display — and bears the same \$499 pricing for a 16GB configuration.

Laid out plainly as this, the Samsung Galaxy Note 10.1's case as a compelling tablet alternative is unavoidably weak. For consumers who, arguably, already own a primary PC, laying down that chunk of cash for the company's latest requires a hefty commitment to the S-Pen. Really, it's the tablet's only differentiating factor and one we're not convinced ordinary households will find lust-worthy. Had the company slapped on a different build and gone just one step up in the resolution department, we could see this being a fair fight. As it is, the Note 10.1 succeeds as an early adopter platform — an attractive option for diehard fans of the original Note.



## WRAP-UP

It's been a long time — six months, to be exact — since Samsung first gave birth to the Galaxy Note 10.1. Our initial reaction was one of intrigue; a risky bet we were eager to see play out in final form, especially given stiff competition from various quad-core competitors. So, does the Note 10.1 manage to overcome its well-matched rivals and carve out its own spot in the crowded tablet space? Ultimately, no matter how deftly executed and streamlined the S-Pen experience may be, this tab still feels like a niche device, especially since the suite of compatible applications is still pretty small. This is the sort of purchase early adopters and creative professionals are likely to make based on their familiarity with Android and the additional flexibility afforded by that stylus.

Yes, it's neat to have access to apps like PS Touch and S Note or even tinker with that newly baked multi-screen functionality, but we suspect that won't

be enough to sway average consumers. People creating content (read: the very segment Samsung's going after) are already well-served by traditional PCs, mice, keyboards and Wacom pads and again, the Note 10.1 doesn't have *that* many optimized apps in its own right. At \$499, meanwhile, there are a host of other tablets with sharper displays, equal or greater built-in storage and quad-core CPUs. To seal the deal and move units off shelves, Samsung should've priced the Note 10.1 at about \$100 less. Instead, it stands on even retail ground with higher-end rivals, forcing you, the consumer, to choose between the finger and the pen. **D**

*Special thanks to Negri Electronics for loaning us an HSPA+ unit.*

*Zach Honig contributed to this review.*

*Joseph Volpe is ambiguously ethnic. He is also an Associate Editor at Engadget.*

## BOTTOMLINE

### SAMSUNG GALAXY NOTE 10.1

# \$499



## PROS

- Fine-tuned S Pen experience
- Smooth performance
- Multiscreen function allows for true simultaneous multi-tasking

## CONS

- Build quality feels cheap
- Unimpressive screen resolution
- A little too pricey

## BOTTOMLINE

Samsung's Galaxy Note 10.1 aims to be all things to everyone, but ends up painting itself into an S Pen niche.





# ESC

**VISUALIZED**

DISTRO  
08.17.12

**SIEMENS B75  
QUANTUM BLADE**

IMAGES COURTESY OF SIEMENS





# CHRIS MOODY



**RED HAT'S SENIOR MARKETING MANAGER** discusses his love for the original Nintendo, throwing video game controllers and forced sleep habits.

**What gadget do you depend on most?**

My Verizon Galaxy Nexus (please give me Jelly Bean). I'm falling in love with my Nexus 7 too, but depend on the Galaxy Nexus for work and personal use extensively.

**Which do you look back upon most fondly?**

Nintendo. I rented games to my neighborhood when I was 5 years old and my Dad and I alternated playing *The Legend of Zelda* (gold cartridge) since he worked third shift until we beat it. That system

stayed on for weeks straight and was a big part of my life growing up.

**Which company does the most to push the industry?**

Besides the obvious Apple and Google mentions, we're doing incredible things at Red Hat and I'm a huge advocate of open source and the power of group think. That love of community has drawn me to Kickstarter, as "normal" people are guiding product decisions. I'm pumped to see what OUYA does with their \$5+ million.

**What is your operating system of choice?**

Android for mobile, Linux for work and OS X for personal use.



**“I vividly remember playing Kung Fu on the NES and throwing the controller at the television.”**

**What are your favorite gadget names?**

Super Nintendo (such a great adjective) and Dreamcast.

**What are your least favorite?**

Wii and The New iPad (while brilliant because everyone refers to it as the new iPad, it struck me as a little “meh”).

**Which app do you depend on most?**

Netflix — we cut cable and watch 95 percent of our content through this wonderful app on our Roku at home.

**What traits do you most deplore in a smartphone?**

Huge battery drain, bloatware, restrictive configurations.

**Which do you most admire?**

Form factor, battery life, openness / flexibility and speed.

**What is your idea of the perfect device?**

The original Nintendo. What other device can see performance improvements by blowing in it (quick cartridge repair)? It is also extremely easy to repair cartridges with a small screwdriver and a white eraser —

just clean them up a little, get rid of the eraser dust and you’re golden. No scratches there.

**What is your earliest gadget memory?**

I had Atari, but I vividly remember playing *Kung Fu* on the NES and throwing the controller at the television (the ones with the really thick glass) every time I died. Luckily, I was able to beat the game before chipping the industrial-grade glass on those TVs. I still can hear that “ting” sound in my head.

**What technological advancement do you most admire?**

Broadband internet. While dramatically improving still, dial-up was really painful if you think about it.

**Which do you most despise?**

The speed of innovation. I hate buying a cutting-edge device and then feeling outdated a month later.

**What fault are you most tolerant of in a gadget?**

I don’t mind random crashes as much as most. I install tons of apps and use my devices extensively and grant some forgiveness in that category.

**Which are you most intolerant of?**

Flawed form factor. I have huge hands and can’t stand feeling like I’m fumbling around with some-





thing. That's one reason I'm in love with the Nexus 7. The form factor is pretty close to perfect.

**When has your smartphone been of the most help?**

I sold a great Garmin GPS thanks to Google Maps. I love never feeling lost thanks to a smartphone. Google Now is proving pretty brilliant too because it tells me if I need to leave earlier for work based on my normal route. Small and incremental improvements to normal daily tasks are much appreciated.

**What device do you covet most?**

Philips 58-inch Cinema 21:9 Platinum 58PFL9955H — my flat-screens are all over 4 years old now. I want this in my stocking for Christmas.

**If you could change one thing about your phone what would it be?**

I want updates as soon as they are available. It irks me that there are delays depending on your carrier. I love Verizon's service, but I want Jelly Bean without legal debates, carrier delays or extensive launch plans. I'll deal with a few bugs instead of waiting months.

**“I love Verizon's service, but I want Jelly Bean without legal debates.”**


**What does being connected mean to you?**

Always being available to communicate (voice, text, data, whatever). I'd venture to say that 40-hour work weeks in an actual office are becoming more commonplace because everyone is connected and tackling tasks at home or on the road as needed. Most of us are guilty of assigning certain tasks to complete at home based on the amount of concentration required. Being connected is changing the personal / professional life balance dramatically. It takes more effort to disconnect.

**When are you least likely to reply to an email?**

2AM to 7AM. I used to power through most of these hours, but having a little man at home and a wife of two years has helped me to ease into a longer disconnect period.

**When did you last disconnect?**

Last night at 10:30PM. My wife is brilliant. We've grown accustomed to sleeping with white noise and my phone on the other side of the room is the “perfect location” for the noise. Once we're settled in, my device morphs into a white noise machine forcing me to disconnect. She outsmarted me there and turned it into a good habit. 



**IN REAL LIFE** is an ongoing feature where we talk about the gadgets, apps and toys we're using in real life.

# HTC ONE S

**THE ONE S IS THE** middle child of HTC's family, and we often treat it that way. It doesn't get much love next to the superstar One X, and it doesn't have the One V's price edge. And yet, after getting the chance to use a One S on Bell for several weeks, it seems to me it's very nearly the champion of the trio.

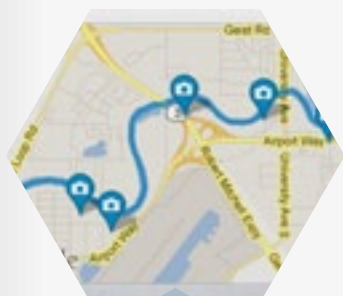
It's all in the shape. As much as the One X earns its stripes, it can be more than a bit unwieldy to use one-handed. The One S is a minor miracle in that regard: it's one of the few "big" phones where a thumb can still reach every important part of the display without some hand acrobatics. It's a cliché of phone reviews to say a device feels "good in the hand," but I'm just being honest here.

In North America, where the One S and One X have to share the same processor, the One S isn't even a step back in performance — it's still brisk, and HSPA+ data

is plenty speedy. Sense 4.0 continues to be a favorite non-stock Android interface through its tendency to let Google's built-in features shine while improving those areas that really need it, like the apps for the camera and regular e-mail. Occasional focusing quirks aside, the 8-megapixel rear camera in question remains a champion for its low-light abilities and its raw speed.

About the only thing keeping the One S from being an absolute hero is, you guessed it, that AMOLED display. It's not as bad as some would have you think; if you were told that all other phones had vanished from the face of the Earth, you'd probably be very content to use HTC's mid-range model. Still, it's clear that HTC's race to make the One S as thin as possible came at a price. The Droid Incredible 4G LTE actually has an advantage in using an LCD that's already sharp combined with a smaller screen that better serves the 960 x 540 resolution. If HTC could improve this one component without hurting anything else, the One S would be nigh-on ideal.

—Jon Fingas



Columbia  
GPS Pal



Eton  
Rukus  
Solar

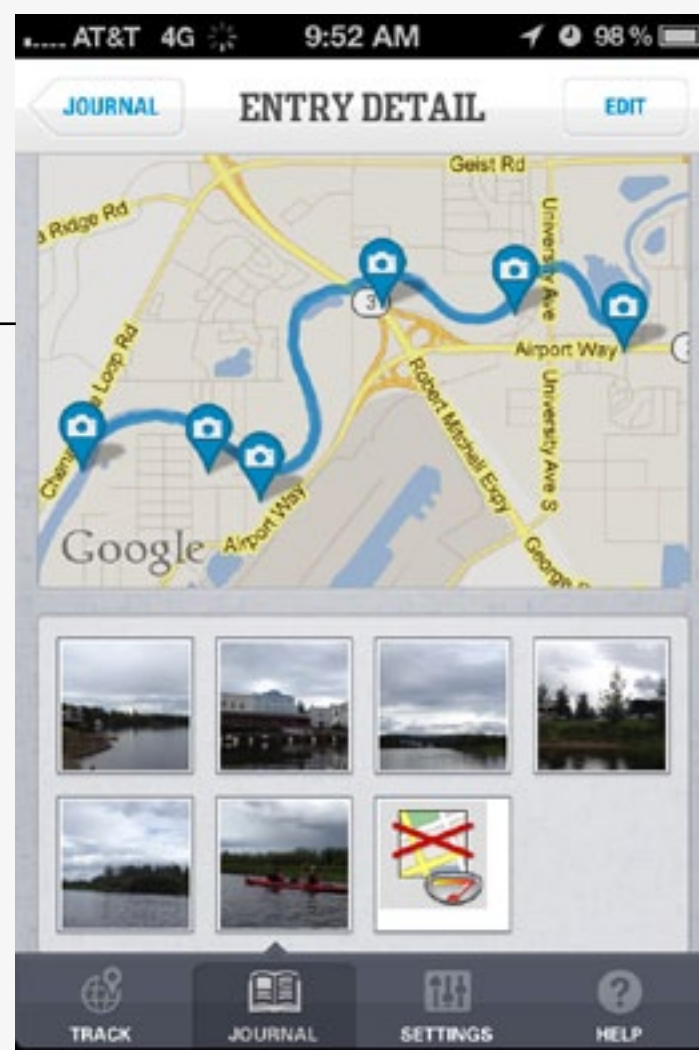


# COLUMBIA GPS PAL

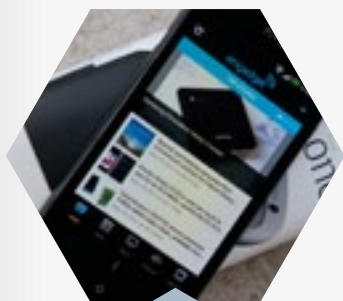
**IT SORT OF FEELS AS IF** tracking apps are a dime a dozen — particularly in Apple’s App Store — but Columbia’s GPS Pal just wouldn’t get out of my thoughts. It’s a company I’ve been happy with over the years and the UI immediately struck me as one that was way too nicely done to be coming from a clothing company. The real question, naturally, is this: can a company that makes outdoor gear also program apps?

GPS Pal is free on iOS and Android, and is meant to track runs, hikes, kayaking excursions and any other outdoor adventure. So long as you have a GPS signal, you can track your movements and elevation changes. It also keeps tabs on a few other vital factors, including overall time, distance traveled and speed — just what you’d expect from a “Portable Activity Log.” Unlike My Tracks for Android this one doesn’t map out your elevation change over time. If you aren’t a hardcore statistics nerd, it probably won’t bother you much.

I really love the apps ability to easily take a photo or video mid-journey, and that it will geotag my



media and then beautifully assemble a pinned map. It also allows you to easily flip through your newly assembled slideshow, and you can even sync it with the company’s website so you never lose trip data. Naturally, you’ll be able to share trips on Facebook or Twitter, and the presentation there is equally nice. After 200-plus ratings in the App Store, it’s sitting at an impressive 4 stars. Battery drain was minimal on my kayaking trip in Fairbanks and honestly, you’ll be hard-pressed to beat it for free. And hey, if you have both an Android phone and an iPhone, you’ll be able to enjoy the same UI on both. Kudos, Columbia. —Darren Murph



HTC  
One S



Eton  
Rukus  
Solar





# ETON RUKUS SOLAR

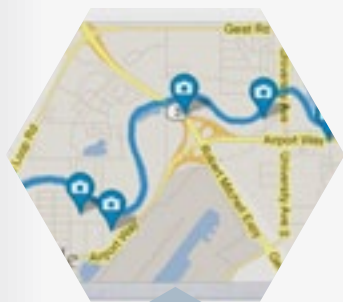
**IF YOU'RE OUT IN THE SUMMER** and want to inflict your musical tastes on the neighbors without too much fuss, then Eton's Rukus Solar might be for you. A hefty photovoltaic panel sits across a pair of tube speakers that'll happily slurp down power to juice a battery rated for eight hours. Connecting over Bluetooth or 3.5mm audio jack, it'll fill a decently sized back garden (or small hall), while a USB port on the underside will let you refill your phone / tablet with nought but Superman's power source. That said, it didn't take too kindly to the traditional ("wet") English summer, only charging when in direct sunlight.

My wife and I used the speakers to discreetly practice our wedding dance in a variety of acoustically unfriendly locations, and each time the speakers came through. While not the most bass-heavy device you'll ever experience, it does a reasonable job with the variety of genres (and gadget-related TV shows) I watched with it. It's also sturdily built and that e-ink screen remains visible in both evening dim and under the summer sun. My only trouble is that I'd feel too ashamed to subject other beach-goers to my musical selections — so perhaps I'll just use it in the garden.

—Dan Cooper



HTC  
One S



Columbia  
GPS Pal



The week that was  
in 140 characters or less.

# NEW TABLETS, NEW TOILETS AND A JUDICIAL SENSE OF HUMOR

@inafried

Lighthearted moment. Only one flash drive available for both #Apple and Samsung lawyers. Judge Koh suggests they share

@Gartenberg

Kickstarter has evolved to the point where it's now just a way to pass the risk of tenuous ideas to consumers who don't know better.

@rossrubin

Too bad the Galaxy Note tablet doesn't outsize its category like the smartphone does because I could use a 23" tablet.

@fromedome

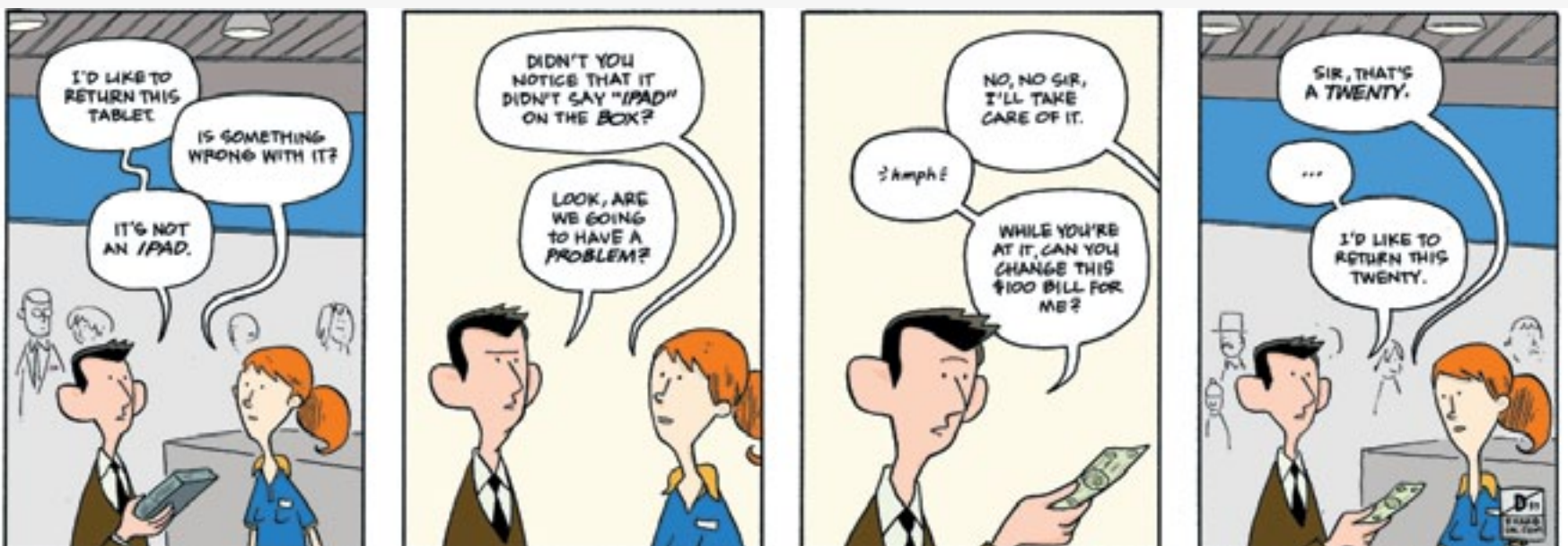
Not sure I like the idea that Google now owns my name.

@BillGates

The modern toilet was invented in 1775 and we promptly stopped innovating... until today.

THE STRIP

BY DUSTIN HARBIN



WHAT IS THIS?  TOUCH TO FIND OUT





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